

FINAL

Environmental Assessment
for
Aerial Spraying for Invasive Species Control
MacDill AFB, Florida



6 Air Mobility Wing
MacDill AFB, FL
September 2007

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE SEP 2007		2. REPORT TYPE		3. DATES COVERED 00-00-2007 to 00-00-2007	
4. TITLE AND SUBTITLE Final Environmental Assessment for Aerial Spraying for Invasive Species Control MacDill AFB, Florida				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) 6 Civil Engineer Squadron (6 CES/CEV),7621 Hillsborough Loop Drive,MacDill AFB,FL,33621-5207				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 93	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

FINAL
FINDING OF NO SIGNIFICANT IMPACT
AERIAL SPRAYING FOR INVASIVE SPECIES CONTROL
MACDILL AIR FORCE BASE, FLORIDA

Agency: United States Air Force (USAF), Headquarters, Air Mobility Command

Background: Pursuant to the President's Council on Environmental Quality (CEQ) regulations, Title 40 Code of Federal Regulations (CFR) Parts 1500-1508, as they implement the requirements of the National Environment Policy Act (NEPA) of 1969, 42 U.S.C. § 4321, et seq., and the Air Force Environmental Impact Analysis Process, as promulgated in 32 CFR Part 989, the USAF conducted an assessment of the potential environmental consequences associated with implementation of the following Proposed Action: Aerial Spraying of Herbicides to Control Invasive Plant Species. The Environmental Assessment (EA) considered all potential impacts of the Proposed Action and alternatives, both as solitary actions and in conjunction with other proposed activities. This Finding of No Significant Impact (FONSI) summarizes the results of the evaluation and the conclusions regarding the significance of impacts from the Proposed Action.

Proposed Action: The Proposed Action involves using a helicopter equipped with a boom spray rig to accomplish the aerial application of chemical herbicides within isolated and remote areas of the base. Herbicides would be sprayed over the target plant species to kill the plants in place and control the spread of nuisance and invasive plant species across the base. The aerial spraying events would be accomplished semi-annually into the future until invasive species growth is brought under control.

Alternatives: Two alternatives to the Proposed Action were considered as part of this EA, including Aerial Application Using Fixed Wing Aircraft and the No Action Alternative. However, only the Proposed Action and the No Action Alternatives were carried through the entire evaluation. The Fixed Wing Aircraft alternative was determined to be impractical because of the relatively small size of the proposed treatment areas and the limited maneuverability of fixed wing aircraft.

Under the No Action Alternative, the use of aerial spraying of herbicides would not be utilized as a tool to control nuisance and invasive plant species at MacDill AFB. The management and control of nuisance and invasive plant species would continue to occur through the use of the ground-level herbicide application methods that have traditionally been used for land management purposes at the base.

Summary of Findings: The environmental consequences associated with implementation of the Proposed Action are summarized below and are discussed in detail in Section 4.0 of the EA.

Air Quality: The Proposed Action would result in a very minor degradation of air quality associated with emission from the helicopter and the spray application of herbicides. The impacts would be temporary and are considered insignificant.

Noise: The limited noise impacts associated with use of the helicopter are considered insignificant because the work will be conducted in remote areas of the base and for a very short duration.

Finding of No Significant Impact
Aerial Spraying for Invasive Species Control

Wastes, Hazardous Materials and Stored Fuels: The Proposed Action would have no impact on wastes, hazardous materials or stored fuel because these materials would be transported and stored in appropriate container, substantially consumed for the project, and any residual would be transported off base by the contractor for proper disposal.

Water Resources: Potential impacts to water resources would be minimized by spraying only on calm days (low wind conditions). Furthermore, the chemicals being used quickly dissipate upon contact with water causing no adverse effects.

Floodplains: Aerial spraying would be accomplished in areas located within the 100-year coastal floodplain; however, the application of herbicides would have no impact on the floodplain.

Biological Resources: The chemical being used are non-toxic to fish and wildlife and would not significantly impact these resources. The control of invasive species within remote undeveloped areas of the base would have a minor positive effect by improving wildlife habitat.

Socioeconomic Resources: Implementation of the Proposed Action would have a negligible economic benefit for the MacDill AFB region.

Cultural Resources: There would be no effect to cultural resources under the Proposed Action and the State Historic Preservation Office has confirmed this determination.

Land Use: The Proposed Action would have no significant adverse impacts on land use at MacDill AFB.

Transportation: Implementation of the Proposed Action would have no significant adverse impacts on transportation at MacDill AFB.

Airspace/Airfield Operations and Bird Aircraft Strike Hazard: The Proposed Action would have no significant impacts to airfield operations or safety.

Safety and Occupational Health: The herbicides are non-toxic to humans and would be dispersed in undeveloped areas of the base, consequently the potential for impacts to safety and health for base personnel is negligible.

Environmental Justice: The Proposed Action would not disproportionately affect minority or low-income populations; accordingly, there would be no environmental justice issues associated with the Proposed Action.

Cumulative Impacts: There are no site-specific direct, indirect, or cumulative impacts associated with the Proposed Action.

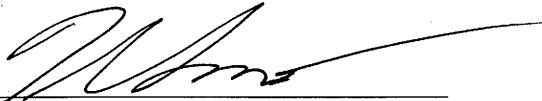
Florida Coastal Zone Management: In accordance with the federal Coastal Zone Management Act (CZMA) and the Florida CZMA, this federal action must be consistent “to the maximum extent practicable” with the Florida Coastal Management Program (CMP). Appendix A to the EA contains the Air Force’s Consistency Statement and finds that the conceptual Proposed Action and alternative plans presented in the EA are consistent with Florida’s CMP. In accordance with Florida statutes, the Air Force has submitted a copy of the attached EA to the State of Florida so that they could perform a

*Finding of No Significant Impact
Aerial Spraying for Invasive Species Control*

coastal zone consistency evaluation. The state has determined that the project is consistent with Florida's CMP.

FINDING OF NO SIGNIFICANT IMPACT: Based upon my review of the facts and analyses contained in the attached EA, which is hereby incorporated by reference, I conclude that implementation of the Proposed Action will not have a significant environmental impact, either by itself or cumulatively with other projects at MacDill AFB. Accordingly, the requirements of NEPA and the regulations promulgated by the Council on Environmental Quality and the Air Force are fulfilled and an Environmental Impact Statement is not required. The Tampa Tribune published a Notice of Availability on August 1, 2007 and no concerns were raised by the public during the 30-day public comment period. Copies of agency coordination letters are included in Appendix C of the EA.

The signing of this Finding of No Significant Impact (FONSI) completes the environmental impact analysis process under Air Force regulations.



**TIMOTHY S. SMITH, Colonel, USAF
Vice Commander, 6th Air Mobility Wing**

22 OCT 07

DATE

Attachment: Environmental Assessment

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

SECTION 1.0 PURPOSE OF AND NEED FOR PROPOSED ACTION	1
1.1 Purpose Of Proposed Action	1
1.2 Need For Proposed Action	1
1.3 Objectives Of The Proposed Action.....	3
1.4 Location Of Proposed Action.....	3
1.5 The Scope Of The Environmental Review.....	3
1.6 Environmental Permit Requirments	4
SECTION 2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES	5
2.1 Detailed Description Of The Proposed Action.....	5
2.2 Description Of The No-Action Alternative.....	9
2.3 Description Of Alternatives Considered But Eliminated From Further Consideration.....	9
SECTION 3.0 AFFECTED ENVIRONMENT.....	11
3.1 Air Quality.....	11
3.2 Noise.....	12
3.3 Wastes, Hazardous Materials, And Stored Fuel.....	13
3.4 Water Resources.....	14
3.5 Floodplains	15
3.6 Biological Resources	16
3.7 Socioeconomics.....	19
3.8 Cultural Resources	19
3.9 Land Use	20
3.10 Transportation	20
3.11 Airspace And Airfield Operations And Bird Aircraft Strike Hazard	21
3.12 Safety And Occupational Health.....	22
SECTION 4.0 ENVIRONMENTAL CONSEQUENCES	23
4.1 Air Quality.....	24
4.1.1 Proposed Action	24
4.1.2 No-Action Alternative	25
4.2 Noise.....	25
4.2.1 Proposed Action	26
4.2.2 No-Action Alternative.....	26
4.3 Wastes, Hazardous Material, And Stored Fuel	26
4.3.1 Proposed Action	26
4.3.2 No-Action Alternative.....	27
4.4 Water Resources.....	27
4.4.1 Proposed Action	27
4.4.2 No-Action Alternative.....	28
4.5 Floodplains	28
4.5.1 Proposed Action	28
4.5.2 No-Action Alternative.....	28
4.6 Biological Resources	28
4.6.1 Proposed Action	28

4.6.2 No-Action Alternative	29
4.7 Socioeconomics	29
4.7.1 Proposed Action	29
4.7.2 No-Action Alternative	29
4.8 Cultural Resources	29
4.8.1 Proposed Action	29
4.8.2 No-Action Alternative	29
4.9 Land Use	30
4.9.1 Proposed Action	30
4.9.2 No-Action Alternative	30
4.10 Transportation	30
4.10.1 Proposed Action	30
4.10.2 No-Action Alternative	30
4.11 Airspace/Airfield Operations And Bird-Aircraft Strike Hazard.....	30
4.11.1 Proposed Action	30
4.11.2 No-Action Alternative	31
4.12 Safety And Occupational Health	31
4.12.1 Proposed Action	31
4.12.2 No-Action Alternative	31
4.13 Environmental Justice	31
4.14 Indirect And Cumulative Impacts	32
4.15 Unavoidable Adverse Impacts.....	32
4.16 Relationship Between Short-Term Uses And Enhancement Of Long Term Productivity	32
4.17 Irreversible And Irretrievable Commitment Of Resources	32
SECTION 5.0 PERSONS CONTACTED	33
SECTION 6.0 LIST OF PREPARERS	35
SECTION 7.0 REFERENCES	37

FIGURES

Figure 1-1	Project Location and Vicinity Map, Aerial Spraying For Invasive Species Control, MacDill Air Force Base
Figure 1-2	Undeveloped Areas of MacDill AFB Where the Use of Aerial Spraying is Proposed and Appropriate
Figure 1-3	Undeveloped Area West of Runway Proposed for Aerial Spraying in FY07 at MacDill Air Force Base
Figure 3-1	Location of Gopher Tortoise Colonies and Wetlands within Areas Proposed for Aerial Spraying, MacDill Air Force Base

TABLES

Table 2.1	Herbicides Considered for Aerial Spraying Operations at MacDill AFB
Table 3.6	Summary of Protected Species Identified at MacDill Air Force Base
Table 4.0	Comparison of Environmental Consequences, Aerial Spraying For Invasive Species Control at MacDill Air Force Base

APPENDICIES

Appendix A	Consistency Statement
Appendix B	Material Safety Data Sheets
Appendix C	Public Notice and Agency Correspondence

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 1.0

PURPOSE OF AND NEED FOR PROPOSED ACTION

This Environmental Assessment (EA) identifies, describes, and evaluates potential environmental impacts associated with the use of aerial spray application of herbicides to control nuisance and invasive plant species at MacDill Air Force Base (AFB) (the Proposed Action). The immediate need for aerial spraying is the proposed treatment of 110 acres of land located west of the MacDill runway. This EA also addresses the continued use of aerial spraying in other undeveloped areas of the base to permit the long-term management and control of nuisance and invasive vegetation at MacDill AFB. This EA discusses alternatives to the Proposed Action including the No-Action Alternative which would continue to control nuisance and invasive species through traditional herbicide application methods used at MacDill AFB.

1.1 PURPOSE OF PROPOSED ACTION

The Proposed Action would provide MacDill AFB with an alternative, more effective method for controlling nuisance and invasive plant species found throughout the base. The invasive species control program has been an ongoing effort at MacDill for the past decade and has made substantial progress toward the program goal of eradicating exotic, invasive species on the base. However, the control of invasive vegetation, typically through herbicide application, has been hampered as a result of limited site accessibility. Many areas impacted by invasive species do not have direct access via roadways. Some areas are completely cut off or isolated due to a network of drainage canals around the sites. Aerial spray application of herbicides is the most effective and least intrusive method for accomplishing invasive species treatment in isolated and/or largely inaccessible areas.

1.2 NEED FOR PROPOSED ACTION

MacDill AFB has many nuisance and invasive plant species. These pest plant species are primarily established in the lesser developed or undeveloped areas of the base. They

have typically become established at sites because of some type of past land disturbance, such as historic land filling activities, construction of drainage canals and mosquito ditches, and construction of temporary roadways. Exotic invasive species have also become established in areas that are no longer mowed or maintained because the facilities or equipment have been abandoned or as a result of planned reductions in grounds maintenance (budget cuts). Once established, invasive species quickly spread and out-compete native plant species. In time, the rapid spread and growth of invasive plants will often results in a monoculture. A monoculture is a very poor ecological condition. There are a number of exotic, invasive species found on base including Paper-bark tree (*Melaleuca quinquinervia*), Australian pine (*Casuarina equisetifolia*), Japanese mimosa (*Albizia julibrissin*) and, cogon grass (*Imperata cylindrical*). Aquatic nuisance and invasive species found at MacDill include water hyacinth (*Eichhornia crassipes*) an exotic species, and cattails (*Typha latifolia*) a native nuisance species. Muscadine grape (*Vitis rotundifolia*), a native grape vine species which exhibits invasive tendencies, is also considered a nuisance species on base. However, the most aggressive and pervasive species at MacDill is the Brazilian pepper (*Shinus terebinthifolious*). Five years ago it was calculated that approximately 1,500 acres of MacDill AFB were impacted by Brazilian pepper. The degree of impact in these areas ranged from low density (several trees per acre) to acres of almost complete monoculture. In the average, impacted areas were generally 30-50% covered with Brazilian pepper. Concerted management efforts, primarily through the application of chemical herbicides, during the last four years have begun to bring this species under control but it is still the dominant non-native invasive species on the base. There are still large areas, most of which are inaccessible by roadway or are isolated by drainage ditches, that are dominated by Brazilian pepper. Hand spraying or backpack spraying of these areas has been attempted but this process is labor intensive, fairly expensive, and has generally been unsuccessful. Since vehicle access to these areas is difficult, or in some cases impossible without filling drainage ditches, the application of herbicide to chemically treat the Brazilian pepper (and other invasive species found on the site) is the most practical way to accomplish treatment of

these areas. Control of invasive species must be an ongoing effort. Additional details on the Brazilian pepper and other invasive species control program can be found in the MacDill AFB Integrated Natural Resources Management Plan (INRMP) (USAF, 2006).

1.3 OBJECTIVES OF THE PROPOSED ACTION

The Proposed Action would permit the effective chemical treatment of invasive plant species located in undeveloped, remote and largely inaccessible areas of the base. The ability to chemically treat areas impacted by invasive species through aerial spray application provides the base with an additional, highly effective tool to help reduce the occurrence and control the spread of invasive and nuisance plant species.

1.4 LOCATION OF PROPOSED ACTION

The Proposed Action would take place on MacDill AFB. The Base occupies approximately 5,630 acres in Hillsborough County adjacent to the City of Tampa, at the southern tip of the Interbay Peninsula (Figure 1-1). The Base is surrounded on three sides by Tampa Bay and Hillsborough Bay, and is bordered on the north by development within the City of Tampa. The aerial spray application of herbicides would only take place within the boundaries of MacDill AFB and would be restricted to the undeveloped, isolated areas of the base. Figure 1-2 presents the general area of the base where aerial spraying would occur. The undeveloped and isolated areas of the base are generally west of Marina Bay Drive and south of the airfield, and also west of the runway.

1.5 THE SCOPE OF THE ENVIRONMENTAL REVIEW

This EA identifies, describes, and evaluates potential environmental impacts associated with the aerial spray application of herbicides in undeveloped and isolated areas of MacDill AFB. The spray application of chemical herbicides is necessary to reduce the occurrence and control the spread of invasive plant species. This environmental analysis has been conducted in accordance with the President's Council on Environmental Quality (CEQ) Regulations, Title 40 of the Code of Federal Regulations (CFR) §§1500-1508, as they implement the requirements of the National Environmental Policy Act (NEPA) of

1969, 42 U.S.C. §4321, et seq., and the Air Force Environmental Impact Analysis Process, as outlined in 32 CFR Part 989.

The Federal Coastal Zone Management Act (CZMA) requires Federal agencies carrying out activities subject to the Act to provide a “consistency determination” to the relevant State agency. The Air Force’s Consistency Determination for the Proposed Action is contained in Appendix A. The State of Florida agrees with the Air Force’s Consistency Determination for the Proposed Action.

1.6 ENVIRONMENTAL PERMIT REQUIREMENTS

No state or Federal permits are required for implementation of the Proposed Action. Prior to initiating any aerial spray operations on a Department of Defense facility, the facility must accomplish a Statement of Need and seek approval by a designated pest management consultant at the major command level or higher. Coordination with the MacDill Airfield Operations must be completed prior to initiating low altitude flights over the base.

SECTION 2.0

DETAILED DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section provides a description of the Proposed Action and Alternatives to the Proposed Action. The Proposed Action is to permit the aerial spray application of chemical herbicides to control nuisance and invasive plant species. The use of aerial spraying is the most effective and least intrusive method for treating invasive plant species which are located in isolated, remote or largely inaccessible areas of the base.

2.1 DETAILED DESCRIPTION OF THE PROPOSED ACTION

Invasive plant species such as Brazilian pepper, melaleuca, and mimosa are found throughout MacDill AFB and have become established in most of the undeveloped natural areas on base. MacDill AFB has a long-range plan to control, and when possible eradicate, nuisance and invasive plant species throughout the base. This program is described in greater detail in the INRMP (USAF, 2006). MacDill has been actively engaged in controlling invasive vegetation on the base for more than a decade and has made substantial advances, but the overall success of the program has been constrained due to limited site accessibility. The Proposed Action would employ rotary wing aircraft (helicopter) equipped with a 20 ft spray boom to aerially apply chemical herbicides on nuisance and invasive plant species found in inaccessible and remote areas of the base. The helicopter would work in tandem with a large tank truck where the herbicides are mixed and stored for immediate use. The tanker truck would be staged at a central location near the work site and serve as the landing platform where the helicopter can refuel and refill its spray tanks with herbicide.

The ability to aerially apply herbicides in the undeveloped and largely inaccessible areas of the base, as described in the Proposed Action, would dramatically expand MacDill's capability to control, and when practical eradicate, nuisance and invasive vegetation. The Proposed Action involves the long term use of aerial spraying in the undeveloped areas of

the base and includes the planned aerial application of herbicides across 110 acres of land west of the MacDill runway (Figure 2-1) as representative of a typical aerial spray application event.

The principle invasive plant species proposed for treatment through the aerial application of herbicides include Brazilian pepper, melaleuca, and mimosa. These species can all be killed using the herbicides listed in Table 2.1. All of the herbicides listed in Table 2.1 may potentially be used for aerial spraying operations at MacDill AFB. The type of herbicide selected for use for a particular spray event would depend on the target plant species, the site conditions, and the proximity of the treatment area to open water and wetlands. Application rates for each herbicide considered for use are outlined in Table 2.1. Application rates range from 2-3 to 192 oz of active ingredient per acre, diluted with water. The helicopter would be equipped with nozzles that produce a coarse spray to minimize drift and achieve uniform coverage. Adjuvants are approved to be mixed with each herbicide to enhance control and reduce drift. A non-ionic surfactant is recommended on the label for maximum effectiveness. The herbicide would not be applied if winds exceed eight (8) miles per hour.

TABLE 2.1
Herbicides Considered for Aerial Spray Operations at MacDill AFB

Herbicide Name	Active Ingredient	EPA Registration No.	Application Rate	Typical Use
Metsulfuron Methyl DF	Metsulfuron 60%	74477-2	2-3 oz./acre	Weed and brush control
Ecomazapyr	Imazapyr 27.8%	74477-6	16-64 oz./acre	Vegetation management for aquatic and terrestrial species

Herbicide Name	Active Ingredient	EPA Registration No.	Application Rate	Typical Use
Weedar 64	2-4-D Amine 46.8%	71368-1	32-192 oz./acre	Vegetation management for aquatic and terrestrial species
Garlon 3A	Triclopyr 44.4%	62719-37	48-64 oz/acre	Pine areas, labeled for wetland applications
Garlon 4	Triclopyr 61.6%	62719-40	48-64 oz/acre	Vegetation management
Aquaneat	Glyphosate	228-365	32-128 oz./acre	Aquatic species

The aerial application of herbicides using a helicopter has several advantages over ground-based herbicide application methods such as backpack spraying, hose or boom spraying using a vehicle, or hack and squirt. With aerial application the herbicide is applied quickly with little to no impact on the surrounding area; there would be no increase in traffic and a decreased risk of spill in transit. Additionally, areas that are remote, isolated or largely inaccessible by vehicle or foot are easily accessed using a helicopter. A helicopter is highly maneuverable which permits the controlled placement of the herbicide on target species. The herbicide would be mixed and loaded onto the helicopter at a controlled staging area which reduces the potential for spills. Finally, there would be no impact to the ground (soil disturbance) thus eliminating erosion risk and impacts to terrestrial species.

Other means of applying herbicides such as backpack sprayers, hose spraying from a vehicle, and hack and squirt have been used successfully at MacDill AFB to treat invasive plant species. These methods are ideal for some situation; however, they also have certain drawbacks. For example, backpack sprayers have an increased risk from herbicide spill (mixing, transporting, applying, and disposing). In addition, this method

requires more man-hours to apply the same amount of herbicide; and would have an increased potential for major soil disturbance. Similarly, the hack and squirt application method is highly labor intensive and has an increased risk of spilling of herbicides. With both of these manual herbicide application methods there is an increased risk to health and safety as workers are often required to hike into isolated areas, through densely wooded forest, under hot humid weather conditions, with the constant threat of contact with poisonous snakes and other potentially dangerous wildlife. The use of a vehicle mounted tank and long spray hoses can reduce the labor (man hours and personnel) required to apply herbicide; however, this application method can result in significant disturbance of surface soils and native vegetation, which can adversely effect wildlife habitat. In addition, repeated vehicle trips to and from the mixing area can impact base traffic and increases the risk of spill. Due to the extensive network of drainage canals and ditches throughout MacDill AFB, many of the isolated, undeveloped areas of the base can not be accessed by vehicle.

There are many wetland areas on MacDill AFB as well as drainage canal and ditches with open water. Some areas proposed for herbicide treatment have wetlands and drainage features within them or adjacent to them. Although the target invasive species are not found in wetlands, they often grow along the wetland margins. Due to the proximity of target invasive species to open water and wetland areas it is important to assess the potential for impacts to the region of influence and associated organisms. When spraying near wetland areas either Economazpr or Weeder 64 would be used because these are approved for use on aquatic species. These herbicides have little to no effect to fish, birds or mammals, and are practically non-toxic to aquatic invertebrates. Economazpyr and Weedar 64 do not bioaccumulate in fish, birds, mammals, or invertebrates and thus do not become part of the food chain. There are minor effects of glyphosate formulations on humans and only in those with direct contact with the herbicide (mixing, loading, or application). There are no reported cases of long term health effects in humans.

2.2 DESCRIPTION OF THE NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the use of aerial spraying of herbicides would not be utilized as a tool to control nuisance and invasive plant species at MacDill AFB. The management and control of nuisance and invasive plant species would continue to occur through the use of the ground-level herbicide application methods that have traditionally been used for land management purposes at the base. Failure to permit the use of aerial spray application methods to control nuisance and invasive plant species would limit MacDill's ability to manage our lands by failing to treat isolated and inaccessible areas of the base, increasing soil disturbance and erosion, damage native vegetation, and increase health and safety risks for workers.

2.3 DESCRIPTION OF ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

Accomplishing aerial spray application of herbicides using fixed wing aircraft such as a C-130 was initially considered as an alternative to the Proposed Action. However, the use of fixed wing aircraft was determined to be impractical for the control of nuisance and invasive species at MacDill AFB because the treatment sites are relatively small and can be spread out over a larger area. The limited maneuverability of the airplane would likely result in substantial collateral damage due to overspray on vegetation in adjacent areas.

THIS PAGE LEFT BLANK INTENTIONALLY

SECTION 3.0

AFFECTED ENVIRONMENT

This section describes the characteristics of the existing natural and man-made environment that could be affected by implementation of the Proposed Action and Alternatives to the Proposed Action. This section establishes the basis for assessing impacts of the alternatives on the affected environment provided in Section 4.0.

3.1 AIR QUALITY

The Clean Air Act (CAA), as amended in 1977 and 1990, provides the basis for regulating air pollution to the atmosphere. The United States Environmental Protection Agency (USEPA) set air quality standards for six “criteria” pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), sulfur oxides (SO_x), measured as sulfur dioxide [SO₂], lead (Pb), and particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀). These standards are the cornerstone of the CAA. Although not directly enforceable, they are the benchmark for the establishment of emission limitations by the states for the pollutants USEPA determines may endanger public health or welfare.

The Environmental Protection Commission of Hillsborough County (EPC) is responsible for issuing and enforcing the CAA Title V Air Operation Permit (Permit No. 0570141-001-AV issued 21 Oct 99) for MacDill AFB. The 1998 air emission inventory at MacDill AFB found the installation is a major source of nitrogen oxides with potential emissions of 184 tons per year.

The USEPA tracks compliance with the air quality standards through designation of a particular region as “attainment” or “non-attainment.” MacDill AFB is located in Hillsborough County within the West Central Florida Intrastate Air Quality Control Region (AQCR). Hillsborough County currently meets the EPA air quality standards for

all criteria pollutants (60 FR 62748, December 7, 1995). Currently, both the base and Hillsborough County are in attainment for all criteria pollutants.

3.2 NOISE

The MacDill AFB Air Installation Compatible Use Zone (AICUZ) Study (1998) has been prepared to address the flying operations at MacDill AFB, and specifically addresses aircraft noise with compatible land development in areas on and around the base. The AICUZ program uses the latest technology to define noise levels including the day-night average sound level (DNL) developed to evaluate the total daily community noise environment. Noise guidelines for the Base are fundamentally the same as published in *Guidelines for Considering Noise in Land-Use Planning and Control*, completed by the Federal Interagency Committee on Urban Noise in June 1980. Most agencies have identified 65 dB DNL as a criterion that protects those most affected by noise and that can often be achieved on a practical basis.

Base activities that have the highest potential source of noise impacts are the aircraft/airspace operations. The AICUZ Study plotted the DNL from 65 to 80 dB for a typical busy day at MacDill AFB. The DNL contours reflect the aircraft operations at MacDill AFB. The DNL 65 dB contour covers the main runway, and extends about one mile southwest over Tampa Bay, and about 1.5 miles northeast over Hillsborough Bay. Areas proposed for aerial spray application are generally outside the 65 dB contour except along the western side of the runway where some of the spray application sites fall within the contour.

MacDill AFB has taken many efforts to control the noise pollution created by activities on base, specifically aircraft operations. The following are steps the base has taken: normal flying operations occur between 7:00 AM and 10:00 PM, practice approach and departure operations are normally conducted during daylight hours, flight pattern altitudes and runway approach angles have been adjusted to reduce noise impacts,

demonstration of communication efforts with the local communities, and the completion of the AICUZ Study to identify potential problems. With the exclusion of aircraft operations, there are no other significant noise sources at the Base.

3.3 WASTES, HAZARDOUS MATERIALS, AND STORED FUEL

There are two classifications of wastes generated at MacDill AFB: non-hazardous solid waste and hazardous waste. Solid waste is generated from various residential and industrial/commercial sources and is disposed of off-base. Curbside recycling is available in military family housing areas at the Base and cardboard, paper, and aluminum recycling is conducted throughout the Base. The Integrated Solid Waste Management Plan for MacDill AFB is used to ensure compliance with all applicable Federal, State, local, and Air Force regulations.

Hazardous wastes generated at MacDill AFB include solvents, fuels, lubricants, stripping materials, used oils, paint-related materials, and other miscellaneous wastes. The responsibility for managing hazardous waste lies within the generating organization and 6 CES/CEVH. Wastes generated at MacDill AFB are stored and managed at approximately 50 Initial Accumulation Points (IAP) and one (1) 90-Day Accumulation Point (90-DAP). There are zero IAP's located within The Proposed project area. The Hazardous Waste Management Plan for MacDill AFB is used to ensure compliance with all applicable Federal, State, local, and Air Force Instructions.

Approximately 105 operations base-wide use hazardous materials. Hazardous materials on-base include various organic solvents, chlorine, freon, paints, thinners, oils, lubricants, compressed gases, pesticides, herbicides, nitrates, and chromates. The use and location of all hazardous materials on base is tracked in the Air Force Environmental Management Information System (EMIS) database which provides information on the chemical constituents of each material.

Diesel, gasoline, and heating oil are stored throughout MacDill AFB in small to medium-sized Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs) ranging in size from 50 to 12,000 gallons. The base receives jet fuel (JP-8) at the Defense Fuel Supply Point (DFSP) via pipeline from Port Tampa. JP-8 storage capacity at DFSP and MacDill AFB is over 7.5 million gallons.

3.4 WATER RESOURCES

Surface water flows at the base are primarily from storm water runoff. Most of the base drains toward the southern tip of the Interbay Peninsula; however, the easternmost section of the base drains toward Hillsborough Bay. The drainage system consists of piping, surface ditches and multiple man-made ponds at the eastern end of the base. Water flows on base are primarily from storm water runoff. To control discharges of floating pollutants resulting from accidental spills, the base maintains a number of boom-type containment systems and absorbents across storm water channels.

The USEPA issued a NPDES multi-sector storm water general permit (No. FLR05B679) to MacDill AFB in October 1998. This permit authorizes the discharge of storm water associated with industrial activity. In accordance with 40 CFR 112, the base has developed a Spill Prevention Control and Countermeasures (SPCC) Plan and a Facility Response Plan given the location of the base adjacent to navigable waters and shorelines, as well as the amount of fuel storage capacity existing on site. The base is permitted to handle 1.2 million gallons per day of wastewater at the on-base wastewater treatment facility.

There are two aquifer systems underlying MacDill AFB, the surficial aquifer and the Floridian aquifer. The surficial aquifer system, which consists generally of sand, clayey sand, and shell, is unconfined and is approximately 20 feet thick. The Floridian aquifer underlies the surficial aquifer and is separated by a clay confining layer. Neither aquifer system is used for water supply at MacDill AFB. The City of Tampa water supply is the

primary source of potable water for the base. Groundwater quality has been affected by past and present base activities. Underground storage tanks, landfills, and the golf courses are sources of known contamination.

3.5 FLOODPLAINS

MacDill AFB's topography is flat, with surface elevations that range from sea level at its southern edge to fifteen feet above mean sea level in its northern portions. Much of the base is less than five feet above mean sea level. According to information provided by the Federal Emergency Management Agency (FEMA Maps dated 1982-1991), approximately 80 percent (80%) of the base is within a 100-year coastal floodplain (see Figure 3-1). The maps indicate that all the residential, industrial, and institutional (medical and education) land uses on the base are within the 100-year floodplain, along with most of the commercial and aviation support areas. The remaining 20% of land that is above the floodplain is designated primarily for airfield operations. Tropical storms could flood much of the southern portion of MacDill AFB (Figure 5-2). The entire base is subject to flooding damage from Category 3 or higher hurricanes affecting the Tampa area.

The extent of the floodplain is an important consideration for MacDill AFB because Executive Order (EO) 11988, *Floodplains Management*, [and the floodplain management criteria contained in 44 CFR Part 60, Criteria for Land Management and Use,] regulates the uses of these areas. The objective of this presidential order is to avoid to the extent possible the long and short term adverse impacts associated with occupancy and modification of floodplains. The order applies to all Federal agencies conducting activities and programs that may potentially affect floodplains. To comply with EO 11988, before taking any action, the Air Force must evaluate the impacts of specific proposals within the floodplain. Much of the remote, undeveloped land where aerial spraying for invasive species control would be conducted is located within the 100-year coastal floodplain.

3.6 BIOLOGICAL RESOURCES

A detailed description of the biological resources found at MacDill AFB is provided in the *Integrated Natural Resources Management Plan* (INRMP) (USAF, 2006). MacDill AFB's INRMP has been approved by the State and Federal fish and wildlife agencies. Land use on MacDill AFB includes urban, light industrial, residential, or improved vacant land. The few undeveloped areas within the base boundaries have all experienced some degree of disturbance, such as ditching, clearing, or the encroachment of exotic vegetation.

The 1998 Wetland Delineation Study identified, delineated, and classified approximately 1,195 acres of wetlands on MacDill AFB. Mangrove wetlands are the principal scrub/shrub wetland community on the base. The mangrove community at MacDill AFB has been categorized as excellent wildlife habitat and is protected by State and local regulations. Mangrove wetlands are located adjacent to areas proposed for aerial application of herbicides and exist in the drainage canals which pass through most of the undeveloped areas of the base. Wildlife species listed by Federal or State agencies as endangered, threatened, or of special concern and known to occur permanently or periodically, or have the potential to occur on the base are shown in Table 3.6. In 1996, the *Endangered Species Management Plan MacDill AFB* identified the general locations of protected species at MacDill AFB. Gopher tortoise colonies are found in two areas where aerial spraying could occur (Figure 3-1). One of the gopher tortoise colonies, roughly 10 acres in size, is located within the undeveloped area west of the runway identified for aerial spraying in FY07. Inspection of both of the gopher tortoise colonies by 6 CES/CEVN confirmed that there are very few invasive species within either of the gopher tortoise areas, and the sites are easily accessible by vehicle; consequently it would not be necessary or practical to conduct aerial spraying within these areas. The gopher tortoise colony areas would be avoided during the planned FY07 aerial spraying event as well as any future aerial spray application work. Besides the occasional bird which may

be foraging in a field, there are no other protected species that occur within areas proposed for aerial spray application of herbicides.

TABLE 3.6

Summary of Protected Species Occurring and Potentially Occurring At MacDill AFB

Common name	Scientific Name	Status	
		Federal	State
Reptile/Amphibians			
American alligator **	Alligator mississippiensis	T (SA)	SSC
Atlantic loggerhead turtle	Caretta caretta	T	T
Atlantic Green turtle	Chelonia mydas mydas	E	E
Eastern Indigo snake	Drymarchon corais couperi	T	T
Gopher tortoise	Gopherus polyphemus	-	T
Gopher frog	Rana capito	-	SSC
Florida pine snake	Pituophis melanoleucus mugitus	-	SSC
Short-tailed snake	Stilosoma extenuatum	-	T
Birds			
Roseate spoonbill **	Platalea [Formerly Ajaia] ajaja	-	SSC
Florida scrub jay	Aphelocoma coerulescens	T	T
Limpkin	Aramus guarauna	-	SSC
Burrowing owl **	Athene cunicularia	-	SSC
Piping plover **	Charadrius melodus	T	T
Southeastern snowy plover	Charadrius alexandrinus tenuirostris	-	T
Little blue heron **	Egretta caerulea	-	SSC
Reddish egret **	Egretta rufescens	-	SSC
Snowy egret **	Egretta thula	-	SSC
Tricolored heron **	Egretta tricolor	-	SSC
Arctic peregrine falcon	Falco peregrinus tundrius	-	E
South East American Kestrel **	Falco sparverius	-	T
Florida sandhill crane **	Grus canadensis pratensis	-	T
American oystercatcher **	Haematopus palliatus	-	SSC
Bald Eagle **	Haliaeetus leucocephalus	T	T
Wood stork **	Mycteria americana	E	E
Brown pelican **	Pelecanus occidentalis	-	SSC
Red cockaded woodpecker	Picoides borealis	E	T
Audubons crested caracara	Polyborus plancus audubonii	T	T
Least tern **	Sterna antillarum	-	T
Roseate tern	Sterna dougallii	T	T
Bachman’s warbler	Vermivora bachmanii	E	E
Black skimmer **	Rynchops niger	-	SSC
White ibis **	Eudocimus albus	-	SSC
Mammals			
Florida mouse	Podomys floridanus	-	SSC
Sherman’s fox squirrel	Sciurus niger shermani	-	SSC
West Indian manatee **	Trichechus manatus	E	E

Common name	Scientific Name	Status	
		Federal	State
Fish			
Common snook **	<i>Centropomus undecimalis</i>	-	SSC

T=Threatened, T(SA)=Threatened/Similarity of Appearance, E= Endangered, SSC= Species of Special Concern, C2=Candidate for listing

Source: Endangered Species Management Plan, MacDill AFB, Florida, 1996, Florida's Endangered Species, Threatened Species and Species of Special Concern, 2004

*Gopher tortoise Management Plan not approved as of March 2007

** Species has been documented at MacDill AFB

3.7 SOCIOECONOMICS

The Economic Impact Region (EIR) for MacDill AFB is the geographic area within a 50-mile radius of the base subject to significant base-related economic impacts. According to the most recent (2003) Economic Resource Impact Statement for MacDill AFB, the military and civilian workforce totaled 0.9% of employment in Hillsborough County. Department of Defense spending for local goods and services to support base operations provided a total annual economic impact of \$1.3 billion in FY2002. The total number of jobs supported includes nearly 12,000 military, over 7,200 civilian employees, over 64,000 retired military and 69,000 retired military dependents, 12,400 active duty military dependents and more than 50,000 indirect jobs. Direct and indirect economic impact of defense spending in Hillsborough County is over \$3 billion.

3.8 CULTURAL RESOURCES

Cultural resources include prehistoric and historic sites. These resources consist of historic districts, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. Historic properties listed in or eligible for listing in the National Register of Historic Places (NRHP) are subject to protection or consideration by a Federal agency in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended.

Prehistoric Resource

Five archaeological sites have been identified on MacDill AFB. One of the archeological sites, the EOD Site (Site 8Hi5656), is located within the undeveloped area of the base identified for future aerial spray application of herbicides. Site 8Hi5656 has been determined to be ineligible for the National Register of Historic Places.

Historic Resources

Construction of MacDill AFB began in November 1939, and the base was dedicated in April 1941. Sites and structures related to the early missions remain on Base today. The Historic district that comprises the buildings along Hangar Loop is eligible for listing in the NRHP. This district includes the five hangars and their associated support buildings that make up the MacDill AFB Field World War II-Era Historic District. The second area eligible for listing is the general officer housing area situated on Staff Loop adjacent to Bayshore Drive. These Historic District buildings would not be impacted by the Proposed Action site locations. There are no historic resources located within the undeveloped areas considered for aerial spraying.

3.9 LAND USE

Land use at MacDill AFB includes airfield, industrial, commercial, institutional (educational & medical), residential, recreational, and vacant land. These areas are delineated in MacDill AFB 2010 Plan (USAF, 2002). All of the areas where aerial spray application would be conducted are undeveloped and designated as vacant land.

3.10 TRANSPORTATION

The MacDill Air Force Base Transportation Study is one of the comprehensive tools used to determine future transportation needs for the base. MacDill AFB is currently served by four operating gates. The main gate is located at Dale Mabry Highway, and secondary gates are at Bayshore Boulevard and MacDill Avenue and are only used for commuter

traffic. The Dale Mabry gate handles the largest volume of traffic (59%) entering and leaving the base followed by the Bayshore gate (38%) and the MacDill gate (3%). The fourth gate, located on the west side of the base at Tanker Way is used as the sole entry point for large vehicles including commercial, contractor, delivery, and recreational vehicles.

The transportation system on base consists of arterials, collectors, and local streets that connect with the off-base network through the four gates. Portions of Southshore Avenue and North Boundary Boulevard pass through the general areas identified for aerial spraying; however, aerial spraying would only be conducted within the forested areas and would not be conducted along or over these roads.

3.11 AIRSPACE AND AIRFIELD OPERATIONS AND BIRD AIRCRAFT STRIKE HAZARD

The airspace region of influence includes the airspace within a 20-nautical-mile radius of MacDill AFB from the ground surface up to 10,000 feet above MSL. Radar monitoring and advisories within the region are provided by the Tampa Terminal Radar Approach Control (TRACON). There are 13 military and public airports, as well as five private use airports located within or adjacent to the controlled airspace associated with the MacDill AFB region of influence. No special use airspace exists within the region.

Guidance for reducing the incidents of bird strikes in and around areas where flying operations occur can be found in the MacDill AFB Bird-Aircraft Strike Hazard plan (BASH). The plan establishes provisions to disperse information on specific bird hazards and procedures for reporting hazardous bird activity. Maintaining proper grass height, planting bare areas, removing berry/fruit-producing plants, reducing insect populations, proper waste collection and disposal are some of the ways that MacDill AFB controls birds.

3.12 SAFETY AND OCCUPATIONAL HEALTH

The climate at MacDill AFB is sub-tropical and hot, humid days are quite typical particularly in the summer. Temperatures often reach the mid to upper 90's (°F) with 100% humidity from June through September. When working outside during the day the potential to experience heat exhaustion or heat stroke is fairly high. When working outdoors in the summer, workers must drink lots of fluids to remain hydrated and take frequent breaks in the shade to avoid overheating.

SECTION 4.0

ENVIRONMENTAL CONSEQUENCES

Section 4.0 discusses the potential effects associated with implementation of the Proposed Action and the No Action Alternative. The Proposed Action proposes the use of aerial spraying as an additional tool for the control of nuisance and invasive plant species at MacDill AFB. Aerial spraying would be accomplished using rotary wing aircraft (helicopter) equipped with a boom spray rig. The immediate need for aerial spraying involves herbicide treatment of 110 acres of undeveloped land on the west side of the base to control the exotic, invasive species Brazilian pepper. The Proposed Action also addresses the future use of aerial spraying of herbicides to control nuisance and invasive plant species in identified undeveloped areas of the base where site accessibility by foot or vehicle is limited or impossible. The No Action Alternative would not allow aerial spray application of herbicides but would allow the continued management of nuisance and invasive plant species using ground level spray application methods at MacDill AFB. A brief summary of the anticipated environmental consequences of each action is provided in Table 4.0 below.

TABLE 4.0
Comparison of Environmental Consequences

Environmental Resources	Alternative A – Proposed Action	Alternative B- No Action
Air Quality	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Noise	Short-term – Minor Adverse Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Hazardous Materials/Wastes/Stored Fuels	Short-term – Minor Adverse Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Water Resources	Short-term – Minor Adverse Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Floodplains	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Biological Resources	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – Minor Adverse
Geology and Soils	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Socioeconomics	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Cultural Resources	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Transportation	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Safety and Occupational Health	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – Minor Adverse
Environmental Justice	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – No Impact
Indirect and Cumulative Impacts	Short-term – No Impact Long-term – No Impact	Short-term – No Impact Long-term – No Impact

4.1 AIR QUALITY

4.1.1 PROPOSED ACTION

During the proposed aerial herbicide application project air quality would be degraded temporarily due to increased helicopter operation time and the release of herbicide associated with the application activities. This degradation would not be expected to be significant considering the proposed treatment area, and potential future treatment areas,

would generally be relatively small in area compared to the entire base. Additionally, the duration of any aerial spraying event would be very short, lasting no more than 6 to 8 hours during a single day with no more than two spray events occurring during a one year period. As with the 110 acres proposed for spraying in FY07, future aerial spraying operations would also be accomplished during a one-day period with a one-day follow-up treatment event conducted approximately six months after the initial treatment. Despite the temporary nature and short duration of the Proposed Action, emissions from the helicopter and the aerially spraying of herbicide were considered to determine their impacts on regional air quality. These emissions were compared to existing baseline emissions and federal conformity *de minimis* thresholds for O₃ precursors. Sources of emissions considered include the aerial spray and operation of the helicopter. The aerial spray (herbicide) does not include any VOC's and would not increase concentration of the remaining five priority pollutants (CO, NO₂, O₃, SO_x, and PM₁₀). Emissions are negligible compared to base and regional emissions and are below the 100 tons per year *de minimis* federal conformity thresholds for NO₂ and VOCs. Emissions generated from the helicopter would be less than the *de minimus* levels of the Clean Air Act's general conformity regulations

4.1.2 NO-ACTION ALTERNATIVE

No aerial spray applications would occur under the proposed action. Therefore, there would be no emission generated by the helicopter under the No Action Alternative.

4.2 NOISE

Generally, annoyance is the predominant issue when dealing with environmental noise within a reasonable DNL. Annoyance for short-term activities can also be influenced by factors such as awareness and attitude toward the activity creating the noise.

4.2.1 PROPOSED ACTION

The noise level would be moderately high in close proximity to the aircraft. Noise levels for a small size rotary wing aircraft typical of what would be used at MacDill range from 80-90 dbL in the immediate vicinity of the aircraft but would quickly dissipate with increasing distance. Aerial spray operations would be conducted in remote areas of the base, away from the base population. In addition, aerial spray application events would be one day events, so noise impacts would be very short term. Consequently, the helicopter flight would not substantially increase the level of annoyance for base personnel, or result in hearing loss, speech interference, and sleep interference. Therefore, the Proposed Action would not result in a significant noise impact.

4.2.2 NO-ACTION ALTERNATIVE

No new noise impacts would occur since no helicopter overflight would occur.

4.3 WASTES, HAZARDOUS MATERIAL, AND STORED FUEL

The following section describes sanitary wastewater treatment, solid waste collection and disposal, hazardous material and waste management, and stored fuels management.

4.3.1 PROPOSED ACTION

There would be no increase in the generation of solid waste with the Proposed Action. The only hazardous materials that would be used for the aerial spraying is the herbicide itself. Herbicides would be transported to the base and stored in the staging area in properly labeled containers. The containers would be stored in appropriate storage areas to insure proper management of the containers and reduce the potential for spills. All of the herbicide mixed for spraying would be applied with no excess left over, so no disposal of hazardous materials would be required. Upon completion of the aerial spraying operation, any excess unmixed (concentrate) herbicide would be transported off base by the contractor.

Aviation fuel used to fuel the helicopter would be transported to the staging area by the contractor in a large truck mounted tank. The truck serves as a landing platform for the helicopter and the aircraft can be refueled from the storage tank on the truck. This set-up reduces the potential for spills by limiting the distance between the helicopter and the fuel storage tank and minimizing the transfer of fuel between tanks. Any unused aviation fuel would be transported off site by the contractor when they demobilize at the end of the aerial spraying operation.

4.3.2 NO-ACTION ALTERNATIVE

No impacts to wastes or hazardous material or stored fuels would occur since there would be no change in the existing conditions.

4.4 WATER RESOURCES

4.4.1 PROPOSED ACTION

Aerial spray activities would be conducted in areas adjacent to drainage ditches and wetlands. No work would be conducted directly in wetland areas; however, there is a potential that drifting herbicide could contact surface water sources during the spraying event. The potential for drift will be minimized by only completing aerial spraying on calm days. A review of the Material Safety Data Sheets (Appendix B) for the herbicides proposed for use (Table 2.1) shows the chemicals to be practically non-toxic to fish and aquatic organisms on an acute basis (LC-50 and EC-50 are greater than 100 mg/L in most sensitive species tested) . Finally, any drifting herbicide that contacts surface water would quickly dissipate and be diluted to such a low concentration that there would be no significant impact to aquatic organisms or water quality.

Under the Proposed Action, there would be no direct or indirect discharges to groundwater and no negative impacts to groundwater would occur.

4.4.2 NO-ACTION ALTERNATIVE

There would be no change to the current conditions and no impact to water resources would occur with implementation of this alternative.

4.5 FLOODPLAINS

In accordance with the requirements of EO 11988, the Air Force must demonstrate that there is no practicable alternative to carrying out the Proposed Action within the coastal floodplain. According to 6 CES/CEVN the Proposed Action would occur within the 100-year floodplain.

4.5.1 PROPOSED ACTION

The proposed aerial spray application of herbicides would not adversely impact the 100-year coastal floodplain. The removal of nuisance and exotic vegetation may have a minor positive effect on the natural and beneficial value of the floodplain by improving habitat value.

4.5.2 NO-ACTION ALTERNATIVE

There would be no changes to existing conditions with implementation of the No-Action Alternative and there would be no impacts to the floodplain.

4.6 BIOLOGICAL RESOURCES

4.6.1 PROPOSED ACTION

Implementation of the proposed action would have a net beneficial effect on wildlife by removing the nuisance and exotic vegetation that degrades habitat value. With eradication of the pervasive shrubby tree species from forested areas, sunlight would reach the forest floor and encourage the growth of native herbaceous species that provide forage for wildlife. In addition, the eradication of dense patches of Brazilian pepper from

forested areas would open up the forest understory and allow wildlife to move more freely. The herbicides proposed for use would not adversely affect wildlife because they would be applied at very dilute concentrations and have been determined to be non-toxic to wildlife. Consultation with the USFWS has been completed and the consultation letter is provided in Appendix C.

4.6.2 NO-ACTION ALTERNATIVE

No impacts to Biological Resources would occur including Threatened and Endangered species, wildlife, or wetlands, under the No-Action Alternative since there would be no change to existing conditions.

4.7 SOCIOECONOMICS

4.7.1 PROPOSED ACTION

The Proposed Action would cost approximately \$30,000 each year based on the current availability of Operations and Maintenance funding. This would be a negligible impact to socioeconomic resources.

4.7.2 NO-ACTION ALTERNATIVE

No impact to socioeconomic resources would occur.

4.8 CULTURAL RESOURCES

4.8.1 PROPOSED ACTION

The Proposed Action would have no impact on Cultural Resources.

4.8.2 NO-ACTION ALTERNATIVE

Under the No Action Alternative, no impacts to cultural resources would occur.

4.9 LAND USE

4.9.1 PROPOSED ACTION

Land use would not change with implementation of the Proposed Action.

4.9.2 NO-ACTION ALTERNATIVE

No impacts to land use would be incurred with the No Action Alternative.

4.10 TRANSPORTATION

4.10.1 PROPOSED ACTION

The Proposed Action would not hinder the level of service on base roads and would not impact transportation on the base. Coordination with the base Control Tower would be accomplished prior to implementation of the aerial spraying event and the helicopter would remain in radio contact with the tower during the spraying operation and adjust his flight pattern as needed to avoid conflicts with base aircraft.

4.10.2 NO-ACTION ALTERNATIVE

No impacts on transportation would be incurred under the No-Action Alternative.

4.11 AIRSPACE/AIRFIELD OPERATIONS AND BIRD-AIRCRAFT STRIKE HAZARD

4.11.1 PROPOSED ACTION

Under the Proposed Action, there would be no impact to airspace and/or airfield operations. The helicopter would coordinate the airfield control tower prior to starting work. The control tower would only allow the helicopter to be airborne when there would be no interference with airfield operations. In addition, the helicopter would remain in constant communication with the tower while in flight and would adjust his

pattern or land if an unexpected conflict develops during the work. The Proposed Action would not increase Bird-Aircraft Strike Hazards (BASH).

4.11.2 NO-ACTION ALTERNATIVE

No impacts to airspace/airfield operations would occur from the No-Action Alternative. There would be no effect on BASH.

4.12 SAFETY AND OCCUPATIONAL HEALTH

4.12.1 PROPOSED ACTION

The aerial spraying of herbicides would be accomplished in the undeveloped, wooded areas of MacDill AFB away from base personnel and populated areas. Furthermore, the herbicides are non-toxic to humans at the concentrations being applied. Since there is little to no potential for human exposure to the sprayed herbicide, and the herbicide is non-toxic, there would be no impact to safety and health for base personnel. The operation of small aircraft always presents a potential for accidents to occur; however, since the helicopter would be landing and working over undeveloped areas of the base, only the pilot and his assistant would be at risk from an accident during flying operations.

4.12.2 NO-ACTION ALTERNATIVE

No impacts on safety and occupational health would be incurred under the No-Action Alternative.

4.13 ENVIRONMENTAL JUSTICE

There is one minority/low-income population area northwest of MacDill AFB in the 33616 zip code. However, the Proposed Action would be accomplished entirely within the Base boundaries, and there would be no adverse environmental impacts outside of the Base property. Therefore, no effects to minority or low-income populations would occur with implementation of the Proposed Action.

4.14 INDIRECT AND CUMULATIVE IMPACTS

There are no site-specific direct, indirect, or cumulative impacts associated with the inclusion of aerial spraying as a tool for the management of nuisance and invasive plant species on MacDill AFB.

4.15 UNAVOIDABLE ADVERSE IMPACTS

There are no significant unavoidable adverse impacts associated with the inclusion of aerial spraying as a tool for the management of nuisance and invasive plant species on MacDill AFB.

4.16 RELATIONSHIP BETWEEN SHORT-TERM USES AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

Aerial spraying of herbicides to control nuisance and invasive vegetation would require very limited short term effort but would yield substantial gains in ecosystem health and the ecological productivity of forested areas on MacDill AFB.

4.17 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The Proposed Action would irreversibly commit fuels, herbicide, water, and manpower associated with the operation of a helicopter and aerial spraying of herbicides.

SECTION 5.0
PERSONS CONTACTED

Jason Kirkpatrick 6 CES/CEVN 2610 Pink Flamingo Ave., Bldg 147-310 MacDill AFB, FL 33621-5207 813-828-0459	Michael J. Harrison, P.G. 6CES/CEVW 7621 Hillsborough Loop MacDill AFB, FL 33621-5207 813-828-0458
Robert Ritch 2610 Pink Flamingo Ave., Bldg 147-304 MacDill AFB, FL 33621-5207 813-828-0465	Rick Frahn 6 CES/CEVH 2610 Pink Flamingo Ave., Bldg 147-310 MacDill AFB, FL 33621-5207 813-828-0461
Paul Ridaught Vegetative Solutions LLC P.O. Box 429 Old Town, Florida 32680 352-275-4313	

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 6.0

LIST OF PREPARERS

Mr. Jason Kirkpatrick
6 CES/CEVN
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207
Voice: (813) 828-0459
FAX: (813) 828-2212
e-mail: jason.kirkpatrick@macdill.af.mil

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 7.0

REFERENCES

FDEP, 2003	Florida Department of Environmental Protection, letter stating Florida is in attainment for ozone
Florida Natural Areas Inventory (FNAI), 1996.	Florida Natural Areas Inventory, 1996. Biological Survey of MacDill Air Force Base.
USAF, 1992.	U.S. Air Force, 1986. From the 1940s to Now A Historical Synopsis of the 56th Tactical Training Wing And MacDill Air Force Base, Florida. 56 FW Historian's Office, MacDill AFB.
USAF, 1994.	U.S. Air Force, 1994. Environmental Assessment, Transfer and Reuse of Part of MacDill Air Force Base, Florida.
USAF, 1995	U.S. Air Force, 1995. Environmental Assessment for Implementation of the Integrated Natural Resources Management Plan MacDill Air Force Base, Florida.
USAF, 1995.	Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, 5th Edition (AP-42), United States Environmental Protection Agency, Research Triangle Park, January 1995 (Supplement A, February 1996).
USAF, 1996	U.S. Air Force, 1996. Biological Survey of MacDill Air Force Base – Final Report
USAF, 1998	U.S. Air Force, 1998. Interim Remedial Action/Closure Report for Underground Storage Tank Removal and Facility Demolition: Site 56 and Site 32. MacDill AFB, Florida, April 1998.
USAF, 1998	U.S. Air Force, 1998. Delineation Study of the Waters of the United States Including the Landward Extent of Wetlands and Surface Waters MacDill Air Force Base Tampa, Hillsborough County, Florida.
USAF, 1998	U.S. Air Force, 1998. Air Installation Compatible Use Zone (AICUZ) study MacDill Air Force Base, FL
USAF, 1999	U.S. Air Force, 1999 Final <u>Title V Permit No. 0570141-001-AV</u> MacDill Air Force Base, Florida.
USAF, 2006	U.S. Air Force, 2000-2004. <u>Integrated Natural Resource Management Plan (INRMP)</u> MacDill Air Force, Florida
USAF, 2005	U.S. Air Force, 2005. Integrated Solid Waste Management Plan MacDill Air Force Base, Florida. January 2005
USAF, 2001- 2005	U.S. Air Force, 2001. <u>Integrated Cultural Resources Management Plan (ICRMP)</u> MacDill Air Force Base, Florida.
USAF, 2001	U.S. Air Force, 2001 Hazardous Waste Management Plan, MacDill AFB, FL

USAF, 2002	<u>Economic Resource Impact Statement</u> MacDill Air Force Base, Florida. March 30, 2002
USAF, 2003	U.S. Air Force 2003 Draft AMC AQIA Report
USAF, 2005	U.S. Air Force, 2005. Endangered Species Population Survey MacDill Air Force Base, Florida. January 2005
USAF, date unknown	U.S. Air Force. MacDill Air Force Transportation Study 65% Submittal. MacDill AFB, Florida.
USAF, 2006	U.S. Air Force. MacDill Air Force Environmental Assessment for Construction of a New Housing Maintenance Facility. MacDill AFB, Florida. February 2006.
USEPA, 1995	Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, 5 th Edition (AP-42), USEPA, Research Triangle Park, January 1995 (Supplement A, February 1996).
USEPA, 1985	Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources, 4 th Edition (AP-42), USEPA, Ann Arbor, September 1985, (Supplement A, January 1991).
USEPA, 1990	U.S Environmental Protection Agency Clean Air Act, 1990
USEPA, 1971	Reagan, Jerry A. and Charles A. Grant, Highway Construction Noise: Measurement, Prediction and Mitigation, Special Report HEV-21, U.S. Department of Transportation, FHWA, Office of Environmental Policy, Washington, DC, 1977. Noise From Construction Equipment and Operations, Building Equipment and Home Appliances. U.S. EPA, Washington, DC, 1971
Haas Center for Business Research and Economic Development, University of West Florida, 2003	Florida Defense Industry Economic Impact Analysis. Volume 1. State of Florida and Regional Analyses, December 2003.
Haas Center for Business Research and Economic Development, University of West Florida, 2003	Florida Defense Industry Economic Impact Analysis. Volume 2. State of Florida and Regional Analyses, December 2003.
http://Quickfacts.census.gov/qfd/states/12/12057.html , 2004	Hillsborough County QuickFacts from the US Census Bureau, August 2004
http://tiger.census.gov/cgi-bin/mapsurfer?infact=2&outfact....	U.S. Census Bureau
State of Florida, 1981	Florida Coastal Management Program

FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK

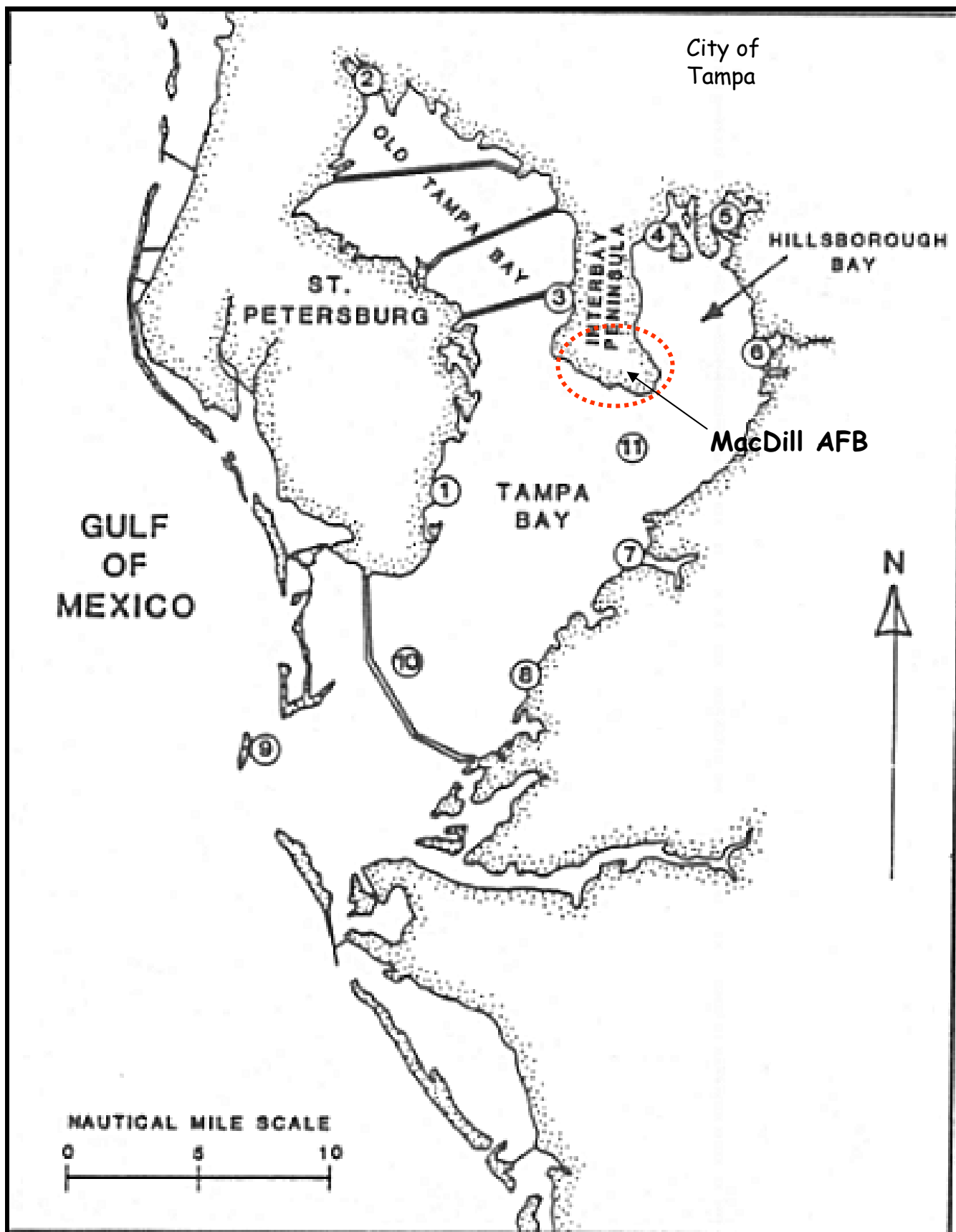


Figure 1-1 Location of MacDill AFB on the Interbay Peninsula



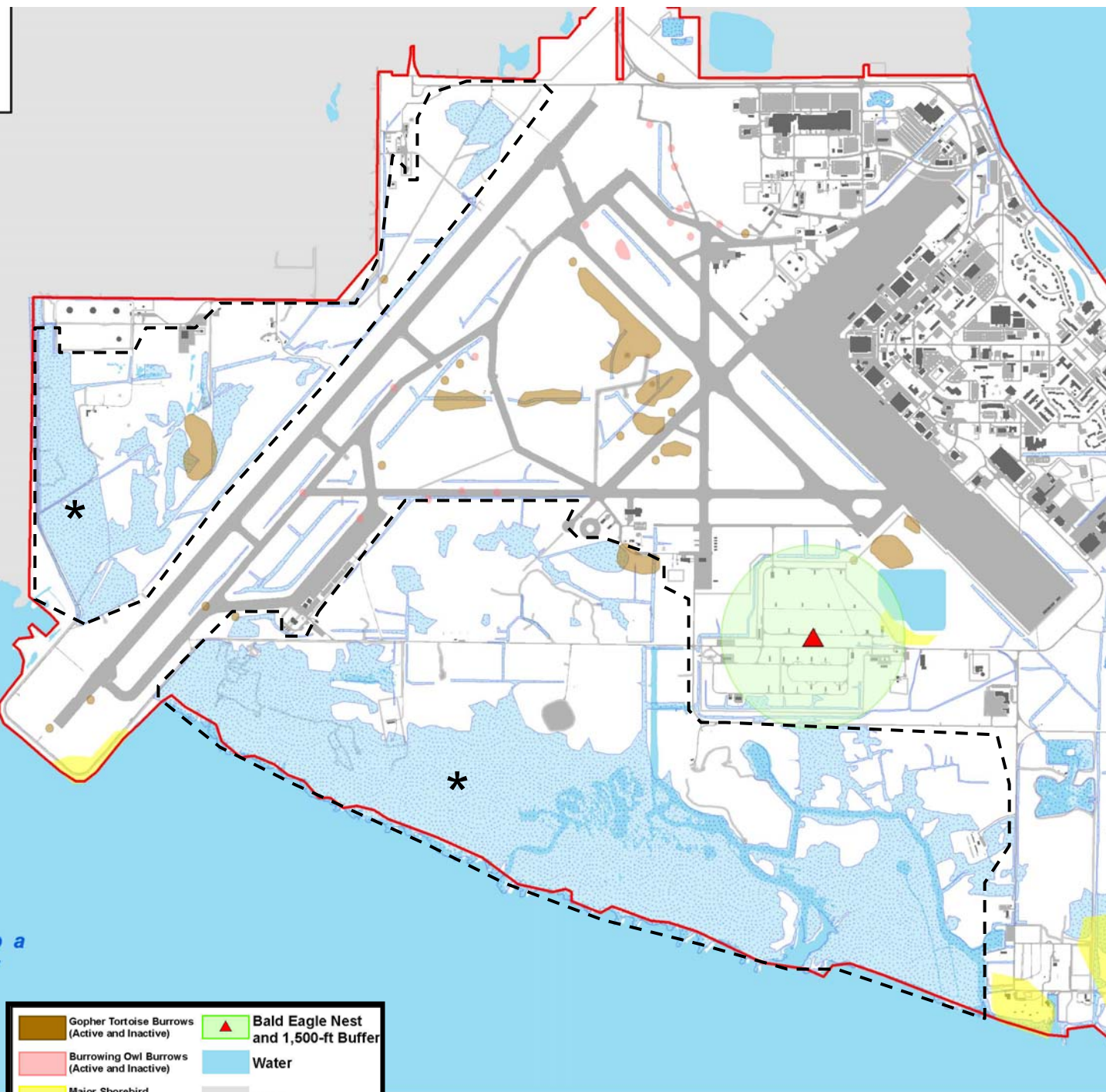
Undeveloped Areas West
of Runway Suitable for
Aerial Spray Application of
Herbicides
(Proposed for FY07)

Undeveloped Areas East
of Runway Suitable for
Aerial Spray Application of
Herbicides

Figure 1-2 Undeveloped areas of MacDill AFB where the use of aerial spraying is practical and proposed.



Figure 1-3 Undeveloped area west of MacDill AFB runway proposed for aerial spraying to control nuisance and invasive species (in FY07). Outlined area is roughly 366 acres and is estimated to have approximately 30% invasive species coverage (110 acres) which requires chemical treatment to kill in-place. Primary invasive plants species are Brazilian pepper, melaleuca, and mimosa.



* - no aerial spraying would be conducted within wetland areas

Figure 3-1 Location of gopher tortoise colonies and wetlands within the undeveloped areas proposed for aerial spraying.

APPENDIX A
CONSISTENCY STATEMENT

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A CONSISTENCY STATEMENT

This consistency statement will examine the potential environmental consequences of the Proposed Action and ascertain the extent to which the consequences of the Proposed Action are consistent with the objectives of Florida Coastal Management Program (CMP).

Of the Florida Statutory Authorities included in the CMP, impacts in the following areas are addressed in the EA: beach and shore preservation (Chapter 161), historic preservation (Chapter 267), economic development and tourism (Chapter 288), public transportation (Chapters 334 and 339), saltwater living resources (Chapter 370), living land and freshwater resource (Chapter 372), water resources (Chapter 373), environmental control (Chapter 403), and soil and water conservation (Chapter 582). This consistency statement discusses how the proposed options may meet the CMP objectives.

CONSISTENCY DETERMINATION

Chapter 161: Beach and Shore Preservation

No disturbances to the base's canals are foreseen under the Proposed Action or Alternative Actions.

Chapter 267: Historic Preservation

The Air Force and the Florida State Historic Preservation Officer have determined that the Proposed Action will have no effect on historic properties associated with the Base.

Chapter 288: Economic Development and Tourism

The EA presents the new employment impact and net income impact of the Proposed Action and alternative. The options would not have significant adverse effects on any key Florida industries or economic diversification efforts.

Chapter 372: Saltwater Living Resources

The EA addresses potential impacts to local water bodies. Water quality impacts were surveyed for existing conditions at the Proposed Action and alternatives. Results indicate that no impacts would result from the Proposed Action or alternatives.

Chapter 372: Living Land and Freshwater Resources

Threatened and endangered species, major plant communities, conservation of native habitat, and mitigation of potential impacts to the resources are addressed in the EA. The Proposed Action and alternatives would result in a minor improvement to native habitat and would not significantly impact threatened or endangered species.

Chapter 373: Water Resources

There would be no impacts to surface water or groundwater quality under the Proposed Action or alternatives as discussed in the EA.

Chapter 403: Environmental Control

The EA addresses the issues of conservation and protection of environmentally sensitive living resources; protection of groundwater and surface water quality and quantity; potable water supply; protection of air quality; minimization of adverse hydrogeologic impacts; protection of endangered or threatened species; solid, sanitary, and hazardous waste disposal; and protection of floodplains and wetlands. Where impacts to these resources can be identified, possible mitigation measures are suggested. Implementation of mitigation will, for the most part, be the responsibility of MacDill AFB.

Chapter 582: Soil and Water Conservation

The Proposed Action and alternatives would not disturb soil or result in soil erosion. Impacts to groundwater and surface water resources also are discussed in the EA.

CONCLUSION

The Air Force finds that the conceptual Proposed Action and alternatives plans presented in the EA are consistent with Florida's CMP.

APPENDIX B

**MATERIAL SAFETY DATA SHEETS
AND SPECIMEN LABELS**

THIS PAGE INTENTIONALLY LEFT BLANK



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

Page 1

"DuPont" "ESCORT" XP HERBICIDE
M0000459 Revised 1-JUN-2005

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"ESCORT" is a registered trademark of DuPont.

"DuPont" is a trademark of DuPont.

Grade : 60% FORMULATION

Tradenames and Synonyms

METSULFURON METHYL
"ESCORT" 60DF

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.
302-774-1000)
Transport Emergency : CHEMTREC 1-800-424-9300 (outside U.S.
703-527-3887)
Medical Emergency : 1-800-441-3637 (outside the U.S.
302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
METSULFURON METHYL	74223-64-6	60
(METHYL 2-[[[(4-METHOXY-6-METHYL-1,3,5- TRIAZIN-2-YL)AMINO] CARBONYL]AMINO] SULFONYL] BENZOATE)		
INERT INGREDIENTS		40

HAZARDS IDENTIFICATION

Emergency Overview

CAUTION! Causes eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing dust or spray mist.

Potential Health Effects

Based on animal data, eye contact with ESCORT XP may cause eye irritation with tearing, pain or blurred vision.

Based on animal data, repeated dermal contact with the active ingredient may cause skin irritation with itching, burning, redness, swelling or rash.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

IF SWALLOWED: No specific intervention is indicated as the product is not likely to be hazardous by ingestion. Consult a physician if necessary.

IF INHALED: No specific intervention is indicated as the product is not likely to be hazardous by inhalation. Consult a physician if necessary.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for emergency medical treatment information.

FIRE FIGHTING MEASURES

Flammable Properties

Not a fire or explosion hazard.

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air.

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Evacuate personnel to a safe area. Wear self-contained breathing apparatus. Wear full protective equipment. Use water spray. Runoff from fire control may be a pollution hazard.

If area is exposed to fire and conditions permit, let fire burn itself out. Burning chemicals may produce by-products more toxic than the original material. If product is on fire, wear self-contained breathing apparatus and full protective equipment. Use water spray. Control runoff.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Emergency Response - Chemical resistant coveralls, waterproof gloves, waterproof boots and face/eye protection. If dusting occurs, use NIOSH approved respirator protection.

Initial Containment

Dike spill. Prevent material from entering sewers, waterways, or low areas.

Follow applicable Federal, State/Provincial and Local laws/regulations.

Spill Clean Up

Shovel or sweep up.

HANDLING AND STORAGE

Handling (Personnel)

Avoid breathing vapors or mist. Avoid breathing dust. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling. Wash clothing after use. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Handling (Physical Aspects)

Keep away from heat, sparks and flames.

Storage

Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation.

Personal Protective Equipment

Always follow the label instructions when handling this product.

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.
Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

Coveralls.
Shoes plus socks.

Exposure Guidelines

Applicable Exposure Limits

METSULFURON METHYL

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 10 mg/m ³ , 8 & 12 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Solubility in Water	: Dispersible
Odor	: Slight
Form	: Solid granule
Color	: Light brown
Specific Gravity	: 1.47 @ 25C (77F)

Bulk Density (Tap Bulk Density) : 0.64 - 0.74 g/mL

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

None reasonably foreseeable.

Decomposition

Decomposition will not occur.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

ESCORT XP	
Oral LD50:	> 5000 mg/kg in rats (Very low toxicity)
Skin LD50:	> 2000 mg/kg in rabbits (Slight to moderate toxicity)

ESCORT XP is a slight eye irritant, but is not a skin irritant or skin sensitizer in animal tests.

(TOXICOLOGICAL INFORMATION - Continued)

Metsulfuron Methyl

Inhalation LC50, 4 hr: > 5.3 mg/L in rats
(Very low toxicity)

Single exposures of animals to Metsulfuron Methyl by inhalation caused body weight loss and other nonspecific effects.

Repeated applications of Metsulfuron Methyl to the skin of rabbits caused skin irritation but no other changes were observed.

Repeated oral doses of Metsulfuron Methyl produced decreased body weight gain and decreased liver weights when compared to the control group. Long term administration caused body weight loss.

Animal testing indicates that Metsulfuron Methyl does not have carcinogenic, developmental, or reproductive effects.

There is a report indicating that Metsulfuron Methyl produced genetic damage in a mammalian cell culture test; however, other tests with Metsulfuron Methyl in bacterial and mammalian cell cultures and in animals did not produce genetic damage. The weight of evidence suggests that Metsulfuron Methyl does not cause genetic damage.

ECOLOGICAL INFORMATION-----
Ecotoxicological Information

AQUATIC TOXICITY:

METSULFURON METHYL

96 hour LC50 - Rainbow trout: > 150 ppm.

96 hour LC50 - Bluegill sunfish: > 150 ppm.

AVIAN TOXICITY:

METSULFURON METHYL

LD50 - Mallard Duck: > 2510 mg/kg.

LC50 - Bobwhite Quail: > 5620 mg/kg

DISPOSAL CONSIDERATIONS-----
Waste Disposal

Do not contaminate water, food, or feed by disposal.
Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/provincial, and local regulations.

ENVIRONMENTAL HAZARDS:

(DISPOSAL CONSIDERATIONS - Continued)

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

This herbicide is injurious to plants at extremely low concentrations. Nontarget plants may be adversely effected from drift and run-off.

Container Disposal

For Plastic Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For Fiber Sacks: Completely empty fiber sack by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into manufacturing or application equipment. Then dispose of sack in a sanitary landfill or by incineration if allowed by state and local authorities.

For Fiber Drums with Liners: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by State and local authorities. If drum is contaminated and cannot be reused, dispose of in the same manner.

For Bags Containing Water Soluble Packets: Do not reuse the outer box or the resealable plastic bag. When all water-soluble packets are used, the outer packaging should be clean and may be disposed of in a sanitary landfill or by incineration, or if allowed by State and local authorities, by open burning. If burned, stay out of smoke. If the resealable plastic bag contacts the formulated product in any way, the bag must be triple-rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer wrap as described above.

For Metal Containers (non aerosol): Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

For Paper and Plastic Bags: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO
Proper Shipping Name : NOT REGULATED

REGULATORY INFORMATION

U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : No
Fire : No
Reactivity : No
Pressure : No

In the United States this product is regulated by the US Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act. It is a violation of federal law to use this product in a manner inconsistent with its labeling.

EPA Reg. No. 352-439

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating
Health : 1
Flammability : 1
Reactivity : 0

NPCA-HMIS Rating
Health : 1
Flammability : 1
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS: DuPont Crop Protection
Address : Wilmington, DE 19898
Telephone : 1-888-638-7668

(Continued)

Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

Vegetation Management, LLC

P.O. Box 21365, Seattle, WA 98111

(800) 790-2085

Chemtrec (24 Hours): (800) 424-9300

"For Chemical Emergency"

Spill, Leak, Fire, Exposure or Accident, Call:

Chemtrec (24 Hours): (800) 424-9300

Outside U.S., call collect: (703) 527-3887

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME: Vegetation Manager Ecomazapyr 2 SL	CHEMICAL NAME (FORMULA): 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid, salt with 2-propanamine (1:1)
--	---

CHEMICAL CLASS:
Imidazolinone

SECTION 2 - HAZARDOUS INGREDIENT INFORMATION

Section 313 of Sara Title III: Ingredients subject to reporting are identified by asterisk (*)

CAS NO.	COMPONENT	%	ACGIH TLV	OSHA PEL	TWA
81510-83-0	Isopropylamine salt of Imazapyr	27.8	N/D	N/D	0.5 mg/m3

SECTION 3 - PHYSICAL PROPERTIES

BOILING POINT: 201°F / 94°C	MELTING POINT: N/A	SPECIFIC GRAVITY: 1.06 g/mL @ 20°C	VAPOR PRESSURE: N/D
VAPOR DENSITY (AIR=1): N/D	% SOLUBILITY IN WATER: Soluble	% VOLATILE BY WEIGHT: N/D	
APPEARANCE: Clear blue liquid	ODOR: Ammonia	pH: 6.0 - 7.0 @ 25°C	

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT & METHOD: >237 Closed Cup	FLAMMABLE LIMITS IN AIR (LFL - UFL): Lower: N/D Upper: N/D
EXTINGUISHING MEDIA: Water fog, foam, CO₂, or dry chemical extinguishing media.	
SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should be equipped with self-contained breathing apparatus and turnout gear.	
UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.	

SECTION 5 - REACTIVITY DATA

STABILITY: Stable. Do not store below 10°F.
HAZARDOUS POLYMERIZATION: Does not occur.
HAZARDOUS DECOMPOSITION PRODUCTS: Including but not limited to oxides of carbon and nitrogen.
CONDITIONS & MATERIALS TO AVOID: Ignition sources, heat or flame. Oxidizing agents and reducing agents. Avoid contact with mild steel and brass – corrosive..

SECTION 6 - PROTECTIVE EQUIPMENT & EXPOSURE CONTROL METHODS

RESPIRATORY PROTECTION: Supplied-air respirators should be worn if large quantities of mist/dust are generated or prolonged exposure possible				
VENTILATION	LOCAL EXHAUST: Adequate	MECHANICAL: Acceptable	SPECIAL: None	OTHER: None
PROTECTIVE GLOVES AND BOOTS: Chemical resistant gloves made of any waterproof material. Shoes plus socks.		EYE PROTECTION: Chemical goggles recommended.		

PRODUCT NAME: Vegetation Manager Ecomazapyr 2 SL

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Long sleeved shirt and long pants.
Also recommended are coveralls and chemical resistant footwear plus socks.

WORK/HYGIENIC PRACTICES:

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing and wash before reuse.
Follow manufacturer's instructions for cleaning maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

SECTION 7 - HEALTH HAZARDS

PRIMARY ROUTES OF ENTRY:

Skin, eyes and inhalation.

CARCINOGEN:

Not listed.

NTP:

Not listed.

MUTAGENICITY:

N/A

TERATOLOGY (BIRTH DEFECTS):

N/A

EYE CONTACT:

Causes moderate eye irritation.

SKIN CONTACT:

Harmful if absorbed through skin.

INHALATION:

Avoid breathing spray mist.

INGESTION:

Harmful if swallowed. May cause burns/blisters to mouth, throat and digestive tract.

ALLERGIC SKIN REACTIONS (Dilute Mix):

Not a skin sensitizer.

SECTION 8 - EMERGENCY & FIRST AID PROCEDURES

SKIN CONTACT:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

EYE CONTACT:

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

INHALATION:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

INGESTION:

Call a poison control center or doctor for further treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless told to by a poison control center or doctor. DO NOT give anything to an unconscious person.

NOTES TO PHYSICIAN:

Treat symptomatically. No specific antidote.

SECTION 9 - SPILL, LEAK & DISPOSAL INFORMATION

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

In case of large scale spill, avoid contact, isolate area and keep out animals and unprotected persons. Call CHEMTRAC (800 424-9300) or Vegetation Management (800 790-2085). In case of small spill, wear personal protective equipment as specified on the label.

For a Liquid Spill – Dike and contain the spill with inert material (sand, earth, etc.) and transfer the liquid and solid diking materials to separate containers for disposal.

WASTE DISPOSAL METHOD:

Pesticide wastes are acutely hazardous. Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If these wastes cannot be disposed to label instructions, contact the state agency responsible for pesticide regulation to the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

PRODUCT NAME: Vegetation Manager Ecomazapyr 2 SL

SECTION 10 – ECOLOGICAL INFORMATION

SUMMARY OF EFFECTS:

DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

FISH TOXICITY (Technical):

96 hour LC₅₀, Rainbow Trout

N/A

INVERTEBRATE (Technical):

48 hour LC₅₀, *Daphnia magna*

N/A

MOVEMENT & PARTITIONING:

N/A

SECTION 11 - SHIPPING DATA

DOT PROPER SHIPPING NAME:

Not Regulated.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health 1

Flammability 1

Reactivity 0

Additional Labeling: None

SECTION 12 - SPECIAL INSTRUCTIONS

SPECIAL INSTRUCTIONS:

None

SECTION 13 - OTHER INFORMATION/PRECAUTIONS

TSCA STATUS:

N/A

SARA TITLE 3: SECTION 311/312 CATEGORIZATIONS (40CFR 370):

Fire: N Pressure: N Reactivity: N Acute: Y Chronic: N TPQ (lbs): Not rated

SARA TITLE 3: SECTION 313 INFORMATION (40CFR 372):

N/A

CALIFORNIA PROPOSITION 65:

N/A

CERCLA REPORTABLE QUANTITY:

N/A

COMMON ABBREVIATIONS THAT MAY HAVE BEEN USED: N/A = NOT APPLICABLE N/D = NOT DETERMINED

The information provided on this Material Safety Data Sheet is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of FarmSaver.com LLC. The data on this sheet relates only to the specific material designated herein. FarmSaver.com LLC assumes no legal responsibility for the accuracy or completeness of this data, nor for use or reliance upon this data.

DATE: 041406 / SH3

**WEEDAR® 64 BROADLEAF HERBICIDE****MATERIAL SAFETY DATA SHEET****1. CHEMICAL PRODUCT AND COMPANY DESCRIPTION**

Product Name: Nufarm Weedar 64 Broadleaf Herbicide

Synonyms: 2,4-D DMA; 2,4-Dichlorophenoxyacetic acid, dimethylamine salt.

EPA Reg. No.: 71368-1

Company Name: Nufarm, Inc.
St. Joseph, MO

Phone Numbers: **For Chemical Emergency, Spill, Leak, Fire, Exposure, Or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300.
For Medical Emergencies Only, Call 877-325-1840.**

Date: March 1, 2000

Revisions: New

Reasons for Revisions: New

Supersedes: New

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS REG. NO.	% BY WEIGHT
Acetic acid, (2,4-dichlorophenoxy)-, dimethylamine salt*	2008-39-1	46.8
Inert ingredients (trade secret)**		53.2

Note: The other major ingredient in this product is water.

*OSHA hazard

**Not OSHA hazard

3. HAZARDS IDENTIFICATION**Emergency Overview:**

Appearance and Odor: Reddish brown liquid, phenolic-amine odor.

Warning Statements: DANGER. Keep out of reach of children. Corrosive. Causes irreversible eye damage. Harmful if swallowed. May be fatal if absorbed through the skin. Avoid breathing vapors or spray mist. Do not get in eyes, on skin or on clothing.

Potential Adverse Health Effects:

Likely Routes of Exposure: Inhalation, eye and skin contact.

Eye Contact: Causes corneal opacity, irreversible eye damage. Vapors and mist can cause irritation.

Skin Contact: May cause slight transient irritation. Overexposure by skin absorption may cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

Inhalation: Harmful if inhaled. May cause upper respiratory tract irritation and symptoms similar to those from ingestion.

Ingestion: Harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

Medical Conditions Possibly Aggravated By Exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

Subchronic (Target Organ) Effects: (An adverse effect with symptoms that develop slowly over a long period of time): Repeated overexposure may cause effects to liver, kidneys, blood chemistry, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods.

Chronic Effects/Carcinogenicity: Prolonged overexposure can cause liver, kidney and muscle damage. The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, more current 2,4-D lifetime feeding studies in rats and mice did not show carcinogenic potential. The USEPA has given a class D classification (not classifiable as to human carcinogenicity).

Reproductive Toxicity: No impairment of reproductive function attributable to 2,4-D has been noted in laboratory animal studies.

Developmental Toxicity: Studies in laboratory animals with 2,4-D have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that 2,4-D is not mutagenic.

4. FIRST AID MEASURES

If swallowed: If patient is conscious and alert, give 2 to 3 glasses of water or milk to drink. If available, give one tablespoon of Syrup of Ipecac to induce vomiting. Alternatively, induce vomiting by touching back of throat with finger. Do not make an unconscious person vomit. Get medical attention.

If on skin: Wash skin with plenty of soap and water. Remove contaminated clothing. Get medical attention.

If in eyes: Flush with water for at least 15 minutes. Get medical attention, PREFERABLY AN OPHTHALMOLOGIST.

If inhaled: Move to an uncontaminated area. Get medical attention.

Note to Physician: This product contains a phenoxy herbicidal chemical. There is no specific antidote. All treatments should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.

Myotonic effects may include muscle fibrillations, myotonia, and muscular weakness. Ingestion of massive doses may result in persistent fall of blood pressure. Myoglobin and hemoglobin may be found in urine. Elevations in lactate dehydrogenase (LDH), SGOT, SGPT and aldolase indicate the extent of muscle damage. It has been suggested that overexposure in humans may affect both the central and peripheral nervous systems. The acute effects on the central nervous system resemble those produced by alcohol or sedative drugs. In isolated cases, peripheral neuropathy and reduced nerve conduction velocities have been reported although these observations may be related to other factors. Gas-liquid chromatography for detecting and measuring chlorophenoxy compounds in blood and urine may be useful in confirming and assessing the magnitude of chlorophenoxy absorption.

5. FIRE FIGHTING MEASURES

Flash Point: >212° F (100° C) by Pensky-Martens closed cup method.

Autoignition Temperature: Not determined.

Flammability Limits: Not determined.

Extinguishing Media: Recommended (large fire): foam, water spray. Recommended (small fires): dry chemical, carbon dioxide.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion hazards: Under fire conditions, toxic, corrosive fumes are emitted. Containers will burst from internal pressure under extreme fire conditions.

Hazardous Decomposition Materials (Under Fire Conditions): Hydrogen chloride, oxides of nitrogen, and oxides of carbon.

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Cleanup and Disposal of Spill: Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. (See Section 13.)

Environmental and Regulatory Reporting: Prevent material from entering public sewer system or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of top soil. The affected area should be removed and placed in an appropriate container for disposal. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Handling:

Handle containers carefully to avoid damage and spills.

Storage:

Store in original container in a dry secured storage area. Do not contaminate water, food or feed by storage or disposal. Avoid storage in close proximity to insecticides, fungicides, fertilizers and seeds. Keep container tightly closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

General:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended usage, including maintenance and repair of equipment. Contact personal protective equipment manufacturers for assistance with selection, use and maintenance of such equipment.

Personal Protective Equipment:

Respiratory Protection: When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations. Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against pesticides. Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

Eye/Face Protection: Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Eye contact should be prevented through use of protective eyewear such as chemical safety glasses with side shields or splash proof goggles. An emergency eye wash should be readily accessible to the work area.

Skin Protection: Skin contact should be avoided through the use of permeation resistant clothing, gloves and footwear, selected with regard for use conditions and exposure potential. An emergency shower should be readily accessible to the work area. Consider both durability and permeation resistance of clothing.

Work Practice Controls: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.

Exposure Guidelines:

Exposure Limits:	OSHA PEL*	ACGIH TLV®*	STEL	Units
Acetic acid, (2,4-Dichlorophenoxy)-, dimethylamine salt	10**	10**	ND	mg/m ³

*8-hour TWA unless otherwise noted.

**Based on adopted limit for 2,4-D.

Ventilation:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

9. PHYSICAL AND CHEMICAL PROPERTIES

NOTE: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

Physical Appearance:	Reddish brown to dark brown liquid.
Odor:	Characteristic organic amine and phenolic.
pH:	Approximately 7 to 9
Specific Gravity:	Approximately 1.155 @ 20°C
Water Solubility:	Soluble.
Melting Point Range:	Not Available.
Boiling Point Range:	Not Available. Expected to be similar to water: > 100°C
Vapor Pressure:	<1 x 10 ⁻⁷ mm Hg @ 26°C (data on 2,4-D dimethylamine salt)
Molecular Weight:	266.1 (data on 2,4-D dimethylamine salt)

10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided: None known

Incompatibility With Other Materials: Strong oxidizing agents: bases, acids.

Hazardous Decomposition Products:

Decomposition Type: Thermal

Decomposition Products: Hydrogen chloride, oxides of carbon, nitrogen and sulfur.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Except as noted, data from laboratory studies conducted on this product are summarized below.

Eye Irritation: Severely irritating (Rabbit).

Skin Irritation: Minimally irritating (Rabbit).

Dermal: Slightly toxic. (Rabbit LD₅₀ 1544 mg/kg).

Inhalation: Slightly toxic. (Rat 4-hr LC₅₀: > 3.5 mg/L) (Data on similar product)

Oral: Slightly toxic. (Rat LD₅₀ 1161 mg/kg).

This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Ingredients Name	Regulatory Agency Listing As Carcinogen			
	OSHA	IARC	NTP	ACGIH
Chlorophenoxy herbicides	No	2B	No	No

(Also see Section 3.)

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:

Data on 2,4-D dimethylamine salt:

96-hr LC₅₀ Bluegill: 524 mg/l

96-hr LC₅₀ Rainbow Trout: 250 mg/l

48-hr EC₅₀ Daphnia: 184 mg/l

Avian Toxicity:

Data on 2,4-D dimethylamine salt:

Bobwhite Quail Oral LD₅₀: 500 mg/kg

Mallard Duck 8-day Dietary LC₅₀: >5620 ppm

Environmental Fate:

In laboratory and field studies, 2,4-D DMA salt rapidly dissociated to parent acid in the environment. The typical half-life of the resultant 2,4-D acid ranged from a few days to a few weeks.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide is a violation of Federal Law and may contaminate ground water. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling and Disposal:

Do not reuse empty container. Triple rinse (or equivalent) adding rinsate to application equipment. Then offer empty container for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORTATION INFORMATION

NOTE: Information is for surface transportation of package sizes generally offered and does not address regulatory variations due to changes in package size, mode of shipment or other conditions.

Packages containing less than 26.3 gallons of this product are generally not regulated. For packages containing 26.3 gallons or higher:

DOT Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D SALTS), RQ (2,4-D SALTS)
DOT Hazard Class / I.D. No.: 9 / UN3082
DOT Label: Class 9

U.S. Surface Freight Classification: Weed killing compound, N.O.I.B.N.

15. REGULATORY INFORMATION

Federal Regulations:

TSCA Inventory: This product is excepted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):

Fire:	Reactive:	Release of Pressure:	Acute Health:	Chronic Health:
No	No	No	Yes	Yes

Section 313 Toxic Chemical(s):

ACETIC ACID, (2,4-DICHLOROPHENOXY)-, CAS NO. 94-75-7 (38.9% equivalent by weight in product)

Reportable Quantity (RQ) under U.S. CERCLA:

Ingredient	RQ
ACETIC ACID, (2,4-DICHLOROPHENOXY) -	100 lbs (approximately 26.3 gallons of this product)

Selected State Regulations:

This product contains the following components that are regulated under California Proposition 65:

Ingredient Name	Cancer List	Reproductive List	Risk Level (ug/day)	
			California	Nufarm
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

16. OTHER INFORMATION

National Fire Protection Association (NFPA®) Hazard Ratings:

Ratings for This Product		Key to Ratings	
2	Health Hazard	0	Minimal
1	Flammability	1	Slight
0	Instability	2	Moderate
		3	Serious
		4	Severe

Abbreviations and Acronyms Not Defined Elsewhere:

ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DOT	Department of Transportation
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
IARC	International Agency for Research on Cancer
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act of 1986
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act

TWA Time Weighted Average
USEPA U.S. Environmental Protection Agency

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm, Inc. be responsible for damages of any nature whatsoever resulting from the use or of reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

WEEDAR® is a registered trademark of Nufarm, Inc.



For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300.
For Medical Emergencies Only, Call 1-877-325-1840.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: AquaNeat® Aquatic Herbicide
Synonyms: Isopropylamine Salt of Glyphosate; Glyphosate IPA Salt
EPA Reg. No.: 228-365

Company Name: Nufarm Americas Inc.
150 Harvester Drive, Suite 200
Burr Ridge, IL 60527

Date of Issue: April 5, 2007
Sections Revised: New or updated information all sections

Supersedes: March 29, 2005

2. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance and Odor: Colorless viscous solution with little odor.

Warning Statements: Keep out of reach of children. CAUTION. Harmful if inhaled. Avoid breathing spray mist.

Potential Health Effects:

Likely Routes of Exposure: Skin contact and inhalation.

Eye Contact: Slightly irritating based on toxicity studies.

Skin Contact: Slightly toxic and slightly irritating based on toxicity studies.

Ingestion: Slightly toxic based on toxicity studies. No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed.

Inhalation: Low inhalation toxicity.

Medical Conditions Aggravated by Exposure: None known

See Section 11: TOXICOLOGICAL INFORMATION for more information.

Potential Environmental Effects:

Available data on similar formulations suggest that this product would be slightly to moderately toxic to aquatic organisms and practically non-toxic to avian species, honeybees and earthworms.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Glyphosate, N-(phosphonomethyl) glycine, in the form of its isopropylamine salt	38641-94-0	53.8
Other Ingredients		46.2

4. FIRST AID MEASURES

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If on Skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable due to aqueous formulation

Autoignition Temperature: Not determined

Flammability Limits: Not determined

Extinguishing Media: In case of fire, use water (flood with water), dry chemical, CO₂, or alcohol foam.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: Containers will burst from internal pressure under extreme fire conditions. If water is used to fight fire or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon, nitrogen, and phosphorous.

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 1 Flammability: 1 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Thoroughly scrub floor or other impervious surface with a strong industrial detergent and rinse with water. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Handling:

Avoid breathing spray mist. Remove contaminated clothing and wash clothing before reuse. Wash thoroughly with soap and water after handling.

Spray solutions of this product should be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Storage:

STORE ABOVE 10°F (-12°C) TO KEEP PRODUCT FROM CRYSTALLIZING. Crystals will settle to the bottom. If allowed to crystallize, place in a warm room 68°F (20°C) for several days to redissolve and shake, roll or agitate to mix well before using. Do not contaminate water, foodstuff, feed or seed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Engineering Controls:**

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:

Eye/Face Protection: To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Isopropylamine Salt of Glyphosate	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Colorless viscous solution with little odor.

Boiling Point: Not determined
Density: 10.00 pounds/gallon
Evaporation Rate: Not determined
Freezing Point: 10°F (-12°C)
pH: 5.0 - 5.4

Solubility in Water: Miscible
Specific Gravity: 1.201 @ 20°C
Vapor Density: Not determined
Vapor Pressure: Not determined
Viscosity: 67.9 cPs @ 20°C

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under normal handling and storage conditions.

Conditions to Avoid: Excessive heat. Do not store near heat or flame.

Incompatible Materials: Strong oxidizing agents: bases and acids. This product reacts with galvanized steel or unlined steel (except stainless steel) to produce hydrogen gas that may form a highly combustible gas mixture which could flash or explode.

Hazardous Decomposition Products: Under fire conditions may produce gases such as oxides of carbon, nitrogen, and phosphorous.

Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION**Toxicological Data:**

Data from laboratory studies conducted on a similar, but not identical, formulation:

Oral: Rat LD₅₀: >5,000 mg/kg

Dermal: Rabbit LD₅₀: >5,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >4.24 mg/l

Eye Irritation: Rabbit: Minimally irritating

Skin Irritation: Rabbit: Non-irritating

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to glyphosate may decrease body weight gains and effects to liver.

Carcinogenicity / Chronic Health Effects: Prolonged overexposure to glyphosate may cause effects to the liver. There was no evidence of carcinogenicity in animal studies using glyphosate. EPA has given glyphosate a Group E classification (evidence of non-carcinogenicity in humans).

Reproductive Toxicity: In laboratory animal studies with glyphosate, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Developmental Toxicity: In animal studies, glyphosate did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.

Genotoxicity: Glyphosate has produced no genetic changes in a variety of standard tests using animals and animal or bacterial cells.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION**Ecotoxicity:**

Data on Glyphosate technical:

96-hour LC ₅₀ Bluegill:	120 mg/l	Bobwhite Quail 8-day Dietary LC ₅₀ :	>4,500 ppm
96-hour LC ₅₀ Rainbow Trout:	86 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>4,500 ppm
48-hour LC ₅₀ Daphnia:	780 mg/l		

Environmental Fate:

In the environment, salts of glyphosate rapidly dissociate to glyphosate, which adsorbs strongly to soil and is expected to be immobile in soil. Glyphosate is readily degraded by soil microbes to AMPA (aminomethyl phosphonic acid) that is further degraded to carbon dioxide. Glyphosate and AMPA are unlikely to enter ground water due to their strong adsorptive characteristics. Terrestrially-applied glyphosate has the potential to move into surface waters through soil erosion because it may be adsorbed to soil particles suspended in the runoff. Aquatic applications registered for certain formulations may also result in glyphosate entering surface waters. Complete degradation is slow, but dissipation in

water is rapid because glyphosate is bound in sediments and has low biological availability to aquatic organisms. These characteristics suggest a low potential for bioconcentration in aquatic organisms and this has been verified by laboratory investigations of glyphosate bioconcentration in numerous marine and freshwater organisms with and without soil. The maximum whole body bioconcentration factors for fish were observed to be less than 1X. Bioconcentration factors for sediment dwelling mollusks and crayfish tended to be slightly higher, but were always less than 10X. In addition, any residues accumulated in organisms were rapidly eliminated.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures. Emptied container retains vapor and product residue. Observe all label safeguards until container is destroyed.

Container Handling and Disposal:

Plastic Bottles and Non-Returnable Plastic Drums: Do not reuse container. Triple rinse container. Then puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Returnable/Refillable Containers: Close all openings which have been opened during use and replace all caps. Contact Nufarm Customer Service at 1-800-345-3330, to arrange for return of the empty refillable container.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

DOT

Non Regulated – See 49 CFR 173.132(b)(3)

IMDG

Non Regulated – See IMDG 2.6.2.1.3

IATA

Non Regulated – See IATA 3.6.1.5.3

15. REGULATORY INFORMATION

U.S. Federal Regulations:

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370): Immediate

Section 313 Toxic Chemical(s): None

Reportable Quantity (RQ) under U.S. CERCLA: None

RCRA Waste Code: None

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not listed

16. OTHER INFORMATION

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

AquaNeat is a registered trademark of Nufarm Americas Inc.

APPENDIX C

**PUBLIC NOTICE AND
AGENCY CORRESPONDENCE**

THIS PAGE INTENTIONALLY LEFT BLANK



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

Mr. Anthony F. Gennaro, Environmental Flight Chief
Department of the Air Force
6th Air Mobility Wing (AMC)
MacDill Air Force Base, Florida 33621

August 8, 2007

RE: DHR Project File Number: 2007-6447
Received by DHR: August 1, 2007
6 CES/CEV
Draft Environmental Assessment for Invasive Species Control
MacDill Air Force Base, Hillsborough County

Dear Mr. Gennaro:

This office reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties* and the *National Environmental Policy Act of 1969*, as amended. The State Historic Preservation Officer is to advise Federal agencies as they identify historic properties (listed or eligible for listing in the *National Register of Historic Places*), assess effects upon them, and consider alternatives to avoid or minimize adverse effects.

We checked Sections 3.8, 4.8, and 4.14, which deal with Cultural Resources of the above referenced draft environmental assessment. We note that if cultural resources are encountered during spraying activities, procedures outlined in the Cultural Resources Management Plan would be followed. Therefore, this office concurs with the Air Force that the above referenced action should have no significant impact to historic resources.

If you have any questions, please contact James Toner, Historic Sites Specialist, by electronic mail at jetoner@dos.state.fl.us, or at 850-245-6333.

Sincerely,

Frederick P. Gaske, Director, and
State Historic Preservation Officer

XC: Mr. Jason Kirkpatrick

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6436

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6452

☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums
(850) 245-6400 • FAX: 245-6433

☐ Southeast Regional Office
(561) 416-2115 • FAX: 416-2149

☐ Northeast Regional Office
(904) 825-5045 • FAX: 825-5044

☐ Central Florida Regional Office
(813) 272-3843 • FAX: 272-2340

The Tampa Tribune

Ad Number: 0002204946-01
Size: 2 x 6" - Actual Size: 3.778" x 6"
Start Date: Wed, Aug 1, 2007
First Publication: Tampa Tribune
Sales Rep: Stephanie Quintero
Sales Rep Group: Inside/Telesales

Last User: Jay Battigelli
Current Date: Fri, Jul 27, 2007 - 7:32 AM
Advertiser Name: Macdill Afb
Status: Proof
Proof **1**

LEGAL ADVERTISEMENT

PUBLIC NOTICE - UNITED STATES AIR FORCE

The Air Force (AF) is inviting public review and comment on the Draft Environmental Assessment and Draft Finding of No Significant Impact (FONSI) for the proposed aerial spraying of herbicides to control nuisance and invasive plant species. The proposed action involves the use of a helicopter to accomplish aerial spraying in remote areas of the base. The one-day spray events would be conducted no more frequently than semi-annually. MacDill AFB has evaluated the proposed action in accordance with 32 CFR 989 and finds that it would not result in significant impacts to environmental resources.

NOTICE OF AVAILABILITY

The EIAP documents satisfy the requirements of the National Environmental Policy Act (NEPA). The documents are available for public review and comment from August 1st through September 3rd, 2007 at the Tampa/Hillsborough County Public Library, located at 900 N. Ashley Drive, Tampa, FL 33606. The documents may be found in the Humanities Section of the Main Library. Address written comments to the 6 AMW Public Affairs, 8209 Hangar Loop Drive, Suite 14, MacDill AFB, FL 33621-5502. The telephone number is (813) 828-2215.

The Tampa Tribune

Published Daily

Tampa, Hillsborough County, Florida

State of Florida }
County of Hillsborough SS.

Before the undersigned authority personally appeared C. Pugh, who on oath says that she is the Advertising Billing Supervisor of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of the

Metro IN THE Tampa Tribune

In the matter of Legal Notices

was published in said newspaper in the issues of

08/01/2007

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida

PUBLIC NOTICE - UNITED STATES AIR FORCE

ar next preceding the first publication of the attached copy of
ffiant further says that she has neither paid nor promised any person,
publication in the said newspaper.

The Air Force (AF) is inviting public review and comment on the Draft Environmental Assessment and Draft Finding of No Significant Impact (FONSI) for the proposed aerial spraying of herbicides to control nuisance and invasive plant species. The proposed action involves the use of a helicopter to accomplish aerial spraying in remote areas of the base. The one-day spray events would be conducted no more frequently than semi-annually. MacDill AFB has evaluated the proposed action in accordance with 32 CFR 989 and finds that it would not result in significant impacts to environmental resources.

ed by me, this 1 day

or Produced Identification _____
Produced _____



Ana Maria Hodel
Commission #DD551367
Expires: MAY 11, 2010
WWW.AARONNOTARY.COM

Ana Maria Hodel

NOTICE OF AVAILABILITY

The EIAP documents satisfy the requirements of the National Environmental Policy Act (NEPA). The documents are available for public review and comment from August 1st through September 3rd, 2007 at the Tampa/Hillsborough County Public Library, located at 900 N. Ashley Drive, Tampa, FL 33606. The documents may be found in the Humanities Section of the Main Library. Address written comments to the 6 AMW Public Affairs, 8209 Hangar Loop Drive, Suite 14, MacDill AFB, FL 33621-5502. The telephone number is (813) 828-2215.

August 1, 2007



Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

August 2, 2007

Mr. Jason W. Kirkpatrick
Department of the Air Force
6 CES/CEVN
2610 Pink Flamingo Avenue, Bldg. 147-310
MacDill AFB, FL 33621-5207

RE: Department of the Air Force - Draft Environmental Assessment (EA) for
Aerial Spraying for Invasive Species Control, MacDill Air Force Base -
Hillsborough County, Florida.
SAI # FL200708023673C

Dear Mr. Kirkpatrick:

Florida State Clearinghouse staff, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has reviewed the referenced Draft EA.

Based on the information contained in the Draft EA and minimal adverse project impacts, the state has determined that the proposed federal action is consistent with the Florida Coastal Management Program.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Ms. Lauren P. Milligan at (850) 245-2170.

Yours sincerely,

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm



DEPARTMENT OF THE AIR FORCE
6TH AIR MOBILITY WING (AMC)
MACDILL AIR FORCE BASE, FLORIDA

30 JUL 2007

MEMORANDUM FOR US FISH AND WILDLIFE SERVICE

ATTN: Linda S. Smith
9720 Executive Center Drive, Suite 101
St Petersburg FL 33702

FROM: 6 CES/CL


7621 Hillsborough Loop Drive
MacDill AFB FL 33621-5323

SUBJECT: US Fish and Wildlife Service Coordination on the Aerial Spraying to Control
Nuisance and Invasive Plant Species at MacDill Air Force Base (AFB)

1. The US Air Force intends to accomplish aerial application of herbicides as part of the Invasive Species Control Program at MacDill AFB. Invasive species management at MacDill has been an on-going effort for more than a decade and has been very successful. However, limited accessibility to isolated and remote areas of the base has restricted the program's success. The use of aerial spraying would dramatically improve access to remote areas of the base and allow greater control of invasive species in these areas.
2. The principle invasive species targeted for control through aerial application is Brazilian pepper. However, melaleuca, mimosa, and Australian pine will also be treated where they are identified. Figure 1-2 (attached) shows the general areas of the base that are considered suitable for the aerial application of herbicides for invasive species control. These areas are not heavily developed and are generally unoccupied by personnel. Aerial spraying would not be conducted over or adjacent to occupied facilities or in areas actively being used by personnel for training or other outdoor activities.
3. The herbicides proposed for aerial application for invasive species control include Metsulfuron Methyl DF (Metsulfuron 60%, *EPA Reg. No. 74477-2*); Ecomazapyr (Imazapyr 27.8%, *EPA Reg. No. 74477-6*); Weedar 64 (2-4-D Amine 46.8%, *EPA Reg. No. 71368-1*); Aquaneat (Glyphosate, *EPA Reg. No. 228-365*). Although the target species do not typically occur in wetlands, Weedar 64 and Aquaneat are both EPA-approved for use in aquatic systems.
4. MacDill AFB believes that the controlled use of herbicides through aerial application in accordance with the manufactures guidelines would not adversely impact listed threatened or endangered species. If the US Fish and Wildlife Service agrees with this assessment, please document your concurrence by signing where indicated below.

AMC--GLOBAL REACH FOR AMERICA

5. If you would like additional information on the proposed action or would like to inspect the areas proposed for aerial application of herbicides, please contact Mr. Jason Kirkpatrick, 6 CES/CEVN, at (813) 828-0459.



ROBERT B. HUGHES, YF-03
Director, 6th Civil Engineer Squadron

Attachment:

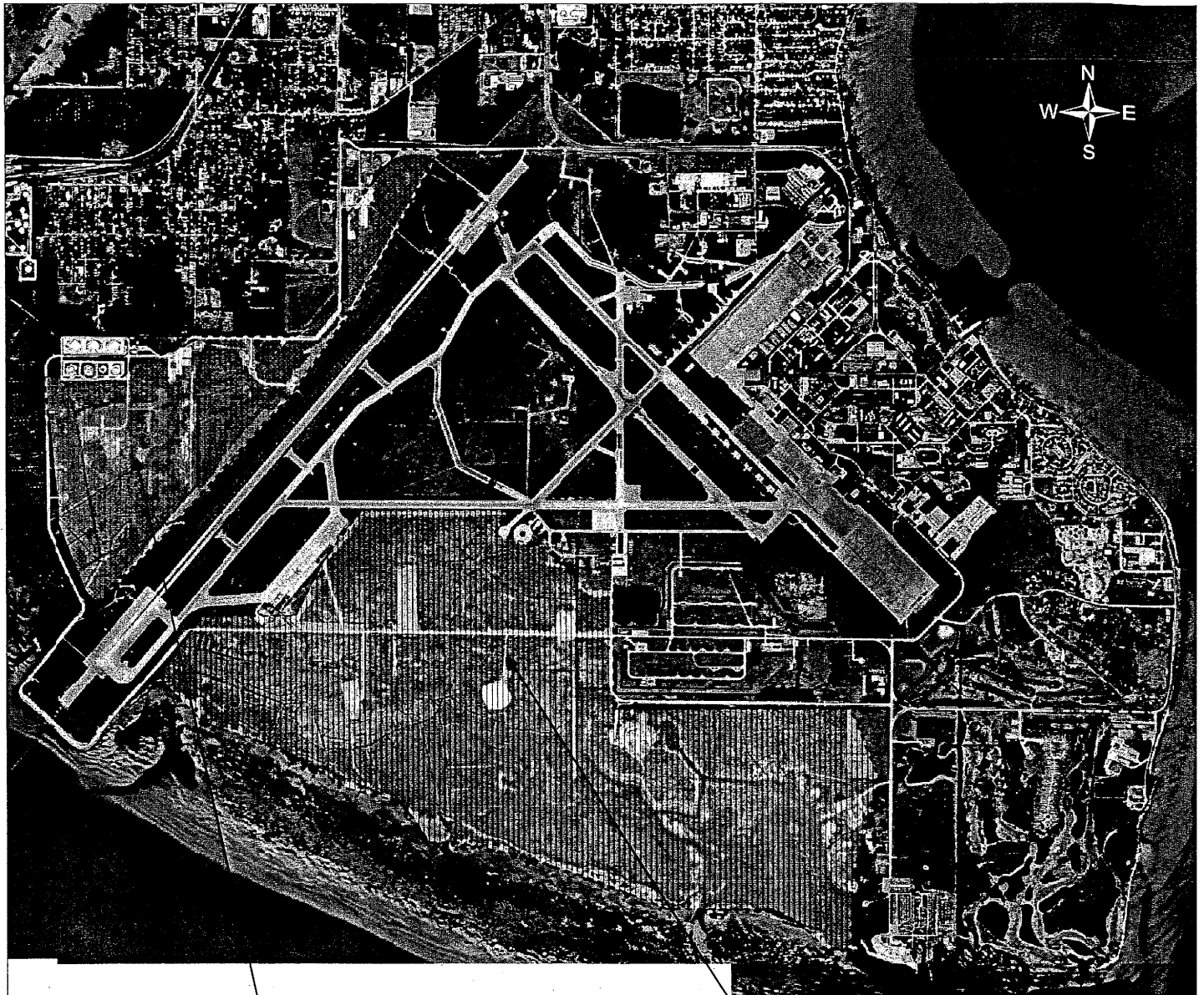
Figure 1-2: General Areas Proposed for Aerial Application of Herbicides

MEMORANDUM FOR 6 CES/CL

The US Fish and Wildlife Service concurs with MacDill's finding that the proposed action, the aerial spray application of herbicides to control nuisance and invasive species on MacDill Air Force Base, would not adversely impact threatened or endangered species.

US Fish and Wildlife Service Representative

Date



Undeveloped Areas West
of Runway Suitable for
Aerial Spray Application of
Herbicides
(Proposed for FY07)

Undeveloped Areas East
of Runway Suitable for
Aerial Spray Application of
Herbicides

Figure 1-2 Undeveloped areas of MacDill AFB where the use of aerial spraying is practical and proposed.